UNIVERSITY OF VAASA

FACULTY OF BUSINESS STUDIES

DEPARTMENT OF MARKETING

Julia Meriläinen

SAVING ENERGY TO PROTECT THE NATURE, BUT MONITORING TO REDUCE THE BILL

Experiences from Adjutantti

Master's Thesis in
Marketing Management

VAASA 2014

TABLE OF CONTENTS **page**

LIST OF FIGURES

LIST OF TABLES

UNIVERSITY OF VAASA
Faculty of Business Studies
Author: Julia Meriläinen
Topic of the Thesis: Saving energy to protect the nature, but monitoring to reduce the bill. Experiences from Adjutantti
Name of the Supervisor: Hanna Leipämaa-Leskinen
Degree: Master of Science in Economics and Business Administration
Department: Marketing
Master's Programme: Marketing Management
Year of Entering the University: 2009
Year of Completing the Thesis: 2014 **Pages:** 90

ABSTRACT

With the still increasing demand for energy, sustainability and consuming in a manner that supports a better quality of life but still leaves resources for the future generations have increased interest among private consumption. The purpose of the thesis is to understand the complexity of sustainable consumption in the context of household energy consumption. The study aims to understand the dimensions of sustainability relevant for this specific area of consumption. The recognized dimensions guide to identifying the challenges related not only to sustainable consumption in general, but more specifically those that make sustainable energy consuming challenging. The difficulties which consumers face when trying to consume energy in a sustainable way range from informational to social challenges.

After building understanding around the challenges and the Finnish household energy consumption in the literacy review, the study aims to uncover what sustainable energy consumption means to consumers who already live in an energy efficient building in Adjutantti in Espoo. The study will also aim to see if the sustainable consumption of these residents has extended to other areas of consumption, such as food and transportation. This study was a qualitative research and data was collected from the residents by in-depth interviews to be able to answer the objectives of the study.

Findings show that there were several differences between households in consuming and attempts to save energy, despite the enabling solutions being the same for all. The energy consumption is affected by both needs and wants, but this specific target group didn't seem to face as many challenges as energy consumers in general. The ability to monitor and receive accurate information of consumption was a key motivator. Despite residents having many new routines after moving to Adjutantti, the study was unable to uncover completely new areas of sustainable consumption, as these conscious consumers were already considerate on several other areas of consumption as well.

KEYWORDS: Sustainable consumption, household energy consumption, challenges, Adjutantti

1. INTRODUCTION

Environmentally and socially conscious consumption, in other words sustainable consumption together with green marketing has increased their interest among researchers, firms and policymakers. (Cherrier, Szuba & Özcaglar-Toulouse 2012: 397.) It has been argued that the origins of "responsibility" and "sustainability" within business date back hundreds of years, but the rise of the modern thinking of sustainability in consumption traces back to the 1960s and 1970s. When earlier the consumption and production patterns where associated with the health effects caused by industrial pollutants, the contemporary perception aims to see it in a bigger picture, almost as an environmental reform. Consumers are also introduced with environmentally friendlier lifestyles by ascribing them with responsibility and co-responsibility with producers. (Connolly & Prothero 2008: 118.)

Briefly, sustainable consumption is consuming in such a manner that present basic needs are fulfilled without jeopardizing the possibilities of the future generations (Dolan 2002: 172). Public conversation has mainly focused on transportation's effects on the environment, but recent studies have also examined organic food consumption and the clothing industry. Saving energy in everyday living has also been noticed, but the core reasons and motivators for private energy saving remain unclarified. Are people decreasing their energy consumption because of environmentally responsible reasons, or for cutting down their own electricity bills? In addition to the own interests of the households lowering their energy bills, there is a considerable political interest in understanding and identifying the ways to influence this private energy consumption for environmental reasons. (Gram-Hanssen 2011: 62.)

Despite the common assumption that people living in suburbs and rural area live a more sustainable lifestyle, several studies have proven those assumptions wrong and in fact compact urban living in whole strains the environment less. (Kennedy, Krogman & Krahn 2013: 359; Kärrholm 2011: 98–100.) The Bo01 project in Malmö has received broad international attention, as it is one of the first (if not the first) modern urban areas to be heated, cooled, powered etc. 100% by locally produced renewable energy resources (wind, sun and water). Despite its northern location, this still growing district currently of over 1000 apartments provides a multitude of building techniques and housing technology solutions, measures of waste management and minimized transportation needs to form a sustainable living environment. Indirectly the system

increases the rate of renewable energy use in the city and the idea and systems developed are hoped to act as inspiration for other cities and communities as well to increase the usage of clean energy. (Malmö Stad 2013.)

Sustainability and private energy consumption have begun to receive attention in Finland as well. According to Statistics Finland (2012), the energy consumption of households was 61 884 gigawatt hours (GWh) in 2011. Roughly 84% of all domestic energy consumption targeted heating of the building itself and the water used. 16% of total energy consumption was used in appliances. The image below summarizes from which sources the energy for households is acquired in Finland.

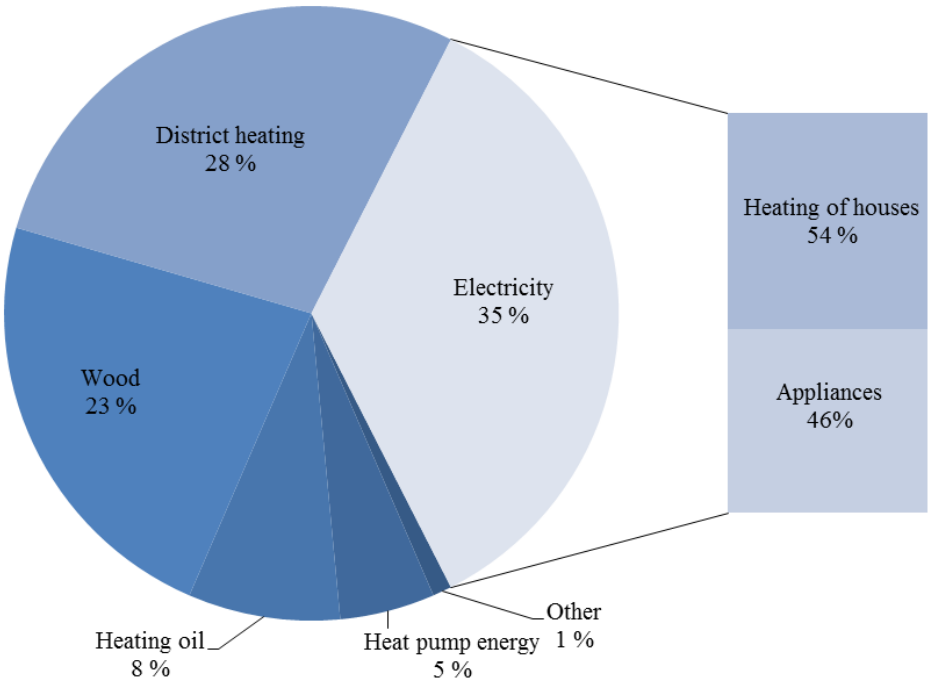

Figure 1. Energy sources in household energy consumption. (Statistics Finland 2012.)

As can be seen from the image, there are several sources for energy in Finland. This image excludes industries and public use and does not specify which percent of the electricity consumed by private consumers is originally from a renewable energy source. However, it provides a clear picture of the most common energy sources for households.

A smaller scale project similar to Bo01, was completed in Finland in 2012. The Adjutantti apartment building in Espoo is offering new technological solutions to two significant energy consumption areas in everyday life; heating and electricity used for appliances. Despite the intelligent solutions offered in the building to ease energy saving and adaptation of sustainable consuming habits, it is necessary to know whether it has helped residents living in Adjutantti engage to more sustainable energy consumption. It could be that it is still perceived challenging. The energy solutions of Adjutantti and the research will be presented in more detail later in the study.

1.1. The purpose and objectives

The purpose of the thesis is to understand the complexity of sustainable consuming in the context of household energy consumption. This is accomplished by a literacy review on the subject. The development of suitable terminology enables an opportunity to examine every day experiences of sustainable consumption as a normative strategy for environmental reform.

The first objective of the study is *to understand what challenges does sustainable energy consuming bring to everyday life and why is it seen so difficult?* In seeking to provide an answer for this question the study aims to tackle the difficulty of 'sustainable energy consumption' as a term and present a variety of challenges recognized by previous studies that link to energy consumption. The literacy review is supported by information on both general level and more specific studies conducted on Finnish energy consumers.

The second objective of the study is to uncover *what sustainable energy consumption and the attempts to save energy mean to Adjutantti's residents* through in-depth interviews. Do they consider it important and why?

Thirdly, this study aims to examine *whether the sustainable consumption of Adjutantti's residents has extended to other areas of consumption*. Have they perhaps started recycling or increased their usage of public transportation? Are they more conscious of what food they buy?

1.2. Methodology and scope

The purpose of the study is to build understanding around the complexity of sustainable consuming and the challenges that consumers face when engaging to more sustainable habits. The research method that enables to gain an in-depth understanding and allows making interpretations of human actions is phenomenological hermeneutics. Phenomenology studies experiences which can be seen to shape from meanings (Eriksson & Kovalainen 2008: 20). The phenomenological hermeneutics is therefore a suitable method for a study that aims to understand and interpret. Hermeneutics is specifically a qualitative research strategy and common for qualitative research methods is the practicality when aiming to understand human behavior and uncovering new dimensions of a phenomenon (Croucher 2004).

The data will be collected by in-depth interviews from informants chosen in beforehand. A semi-structured interview will help to provide necessary answers, but could possibly provide also unexpected answers especially to the third objective.

1.3. Definition of key concepts

There are nearly as many terms and their definitions for consumers acting in an environment respective way as there are authors. These environmentally conscious consumers are often given a prefix; green-, conscious, responsible or sustainable. Responsibility, more specifically consumer responsibility has become a trend, according to which consuming decisions are made. Consumer responsibility still means different things to different consumers and is directly linked to one's moral perceptions. Therefore it enables a personal definition for responsible consuming and gives it broad meanings. (Cherrier, Szuba & Özcaglar-Toulouse 2012: 397.) Responsible consumption however often measures the socially responsible traits of a consumer and attempts to explain the process of consumption, easily missing the dynamic nature of consumption (Dolan 2002: 171–172). The social dimension in this term is more about taking into consideration the conditions in which the products are produced, which is why responsible consumption is not the most suitable choice of words for this study.

Sustainable consumption together is a problematic issue as it is an oxymoron, as 'consume' is something to use it up or to destroy and 'sustaining' something is the

complete opposite (Peattie & Collins 2009: 107–108). However, a comprehensive definition is that "*sustainable consumption is the use of goods and services that respond to basic needs and bring better quality of life, while minimizing the use of natural resources, toxic materials and emission of waste and pollutants over the life cycle, so as not to jeopardize the needs of future generations*" (Dolan 2002: 172). This political and environmental voice of the definition makes it the most usable key concept for this study.

To analyze energy consumption in the private sector, a unit must be defined. The unit has to be broad enough to capture the idea of income sharing and economies of scale derived from sharing resources. *Household* seems to cover the necessary conditions, as it does not require the members to be related, unlike the term family. Even if the income was not perfectly shared, resources usually are. (Smeeding & Weinberg 2001: 2–3.) Most of the literature used in this study have also chosen household as an analyze unit, as energy consumption is measured in usually per household.

1.4. Outline of the study

This study consists of an introduction chapter, theory chapter, methodology, results chapter and a discussion part. The introduction part states the purpose and objectives of this study, a brief scope and methodology and the structure of this study. In the chapter that follows, a review of existing theory is provided to understand sustainability in the context of energy consumption. The chapter will represent the identified challenges from both theory and previous research to form a comprehensive understanding of the challenges in energy consuming.

The third chapter presents the Adjutantti building and its solutions. This methodology chapter also explains why the particular research method was chosen, and more thoroughly why an in-depth semi-structured interview is the most suitable for this study. It also specifies how the interviews are conducted and analyzed to be able to receive detailed answers of the informants' current behavior and make them think about their individual role in the environmental context.

The fourth chapter will showcase the findings from the interviews and interpret and reflect them to the theory presented earlier. The fourth chapter also answers the second

and third objectives of the study. The last chapter will summarize the study and give suggestions for future research.

Figure 2 clarifies the structure of the thesis and aims to picture the theory chapter in a funnel like shape, indicating the manner in which the understanding is being built; from a more general overview towards a specific study of a particular group of consumers. The hermeneutical spiral (which indicates the nature in which the research questions are approached), is an endless spiral in which the information and data must be read several times. The researcher gets closer to the core problem while deepening their own knowledge. (Syrjälä, Syrjäläinen, Ahonen & Saari 1994: 125.) This hermeneutical approach is demonstrated with a few arrows between the theory chapter and the results.

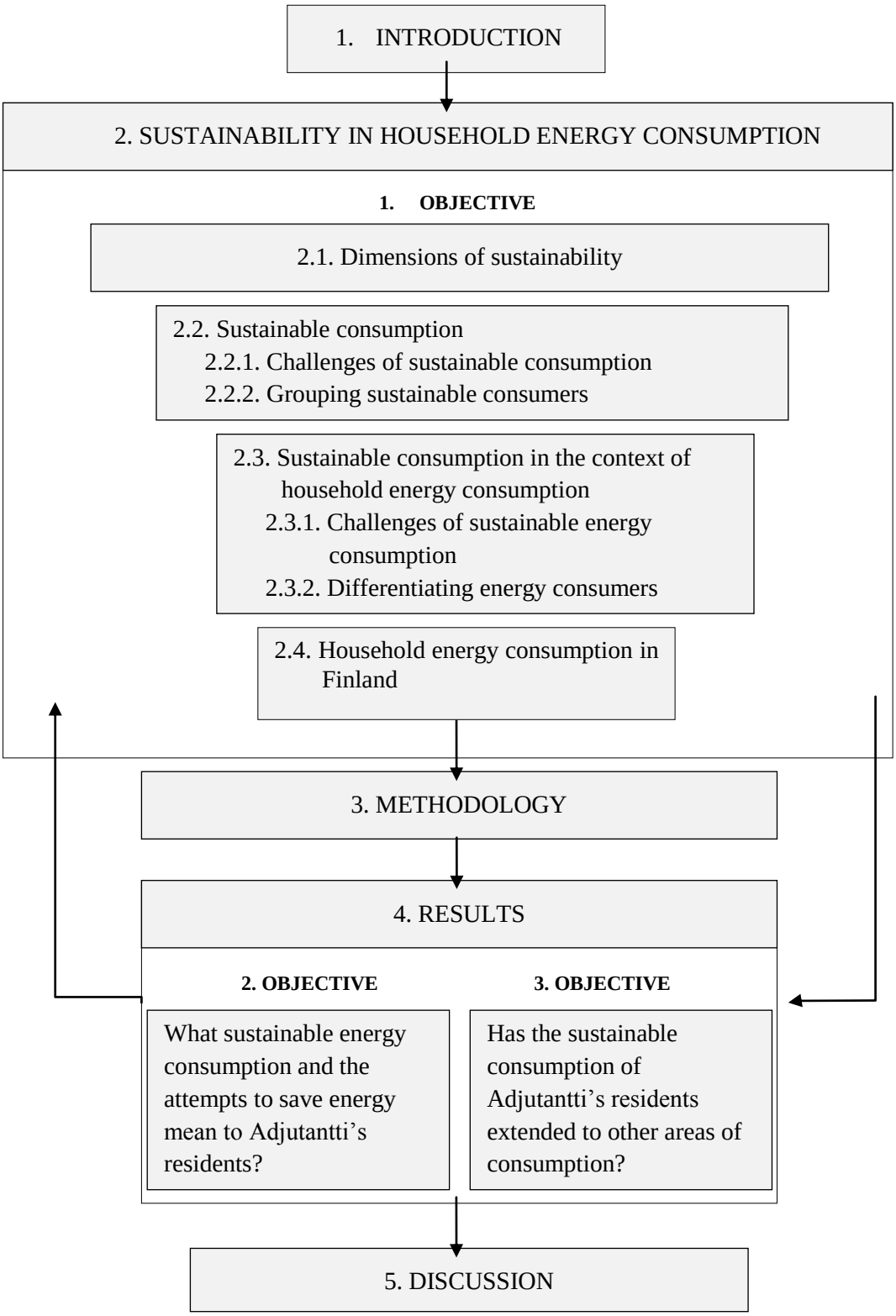

Figure 2. Outline of the study.

2. SUSTAINABILITY IN HOUSEHOLD ENERGY CONSUMPTION

This chapter builds understanding first around sustainability and sustainable consumption, after which it moves to sustainable consumption in the context of energy consumption. Common challenges for both sustainable consumption and energy consumption are presented, as well as providing basic information on current household energy consumption in Finland.

Sustainability is broad subject, and may involve matters like volunteering, global poverty reduction, favoring of organic food and promoting healthy lifestyles (Salonen & Åhlberg 2013: 50–52). However, with the still increasing usage and demand of energy and limited resources of fossil fuels, the need of using alternative energy has and preserving what remains, has been recognized. In addition to regulating and concentrating solely on the supply side and industries, factors like recycling and composting, water conservation and use of renewable energy sources in households have gained interest.

Sustainable energy and forms of renewable energy aim to meet the current needs, without diminishing this same chance of the future generations. Sustainable energy sources are biomass, solar power, wind power, wave power, geothermal power and energy efficient technologies. A noticed difficulty has been that energy end-consumers are not thinking the same way. Energy, regardless of the source is often considered ‘invisible’ and is rarely the object of conscious decisions for consumers. Studies have suggested that average consumers are often skeptical about the functionality of energy efficient products and many lack efficient knowledge about the matter. (Paliwal 2012: 238.)

To understand the complexity of sustainable consumption is it necessary to specify the dimensions of sustainability, to understand through which lenses consumers look at the matter and how they reason their actions. It is also necessary to see which dimensions are relevant for this study, so a clear interview frame can be built. As suggested earlier, one of the main problems is that it has remained unclear how a household’s understanding of environmental awareness and environmental practices relate to their overall household consumption. This problem is supported by Jensen (2008: 353) who also reminds how the conducted environmental practices in everyday life are often

overshadowed by consumption habits in other areas of life, and above all, are often related to different rationales than environmental awareness.

2.1. Dimensions of sustainability

To further explain sustainability and why this research does not approach it via all the dimensions, it is necessary to introduce the dimensions of sustainability generally used in literature and Figure 3 aims to clarify them. Firstly, an *environmental* dimension explains sustainability as preservation of natural resources, ranging from oil resources to fish stock. The *social* dimension sees sustainability as promoting equal opportunities for all and increasing the quality of life of the poor society and is linked to values and attitudes. The *economic* dimension sees economic growth as an important factor in securing human wellbeing. The *temporal* dimension as it name refers suggests to the time perspective in the sense that the needs of both current and future generations need to be considered. The fifth dimension to sustainability is the *developmental* dimension, which indicates that development is crucial for achieving sustainability in forms of technological solutions, changes in attitudes and policies. (Hans & Böhm 2011: 679, 683).

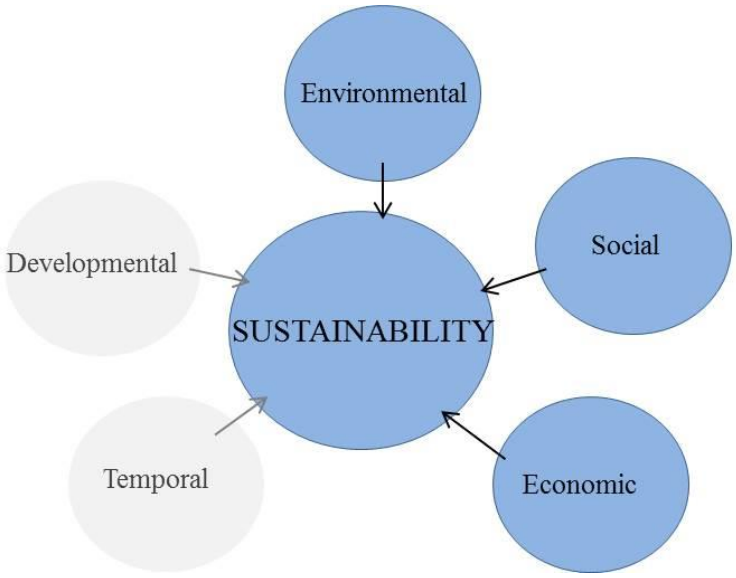

Figure 3. Dimensions of sustainability.

The question is which ones of these are actually relevant for this particular study and in the context of private consuming and household. To keep in mind, all of these dimensions hold more aspects within them. These are all necessary dimension in the bigger picture, but a strict selection based on literature, was to leave two dimensions out of the picture, as they are something a private consumer may not be able to influence without extra efforts.

The *environmental* dimension may prove important, as many concerns related to energy consumption are environment related mutual goods, such as concerns on air pollutions and conservation of energy resources. Consumers need to do responsible purchase and consumption decisions and think about sustainability in everyday routines and household chores to be able to protect the natural environment (Moisander 2007: 406). This dimension in particular may be acknowledged when aiming to answer the second objective of the study, to uncover what energy saving means and why is it practiced, and to which extent the decisions are made based on environmental reasons, or if at all.

Peattie and Collins (2009: 108) argue about the contradiction of talking about sustainability when the humankind is already demanding much more from the planet than it can sustain, yet billions of people live in poverty. However, in the scope of energy consumption, the weight of the social factor and poverty are not equally emphasized on, unlike in the apparel industry, in which the companies and production are under surveillance. In this study, the *social* dimension will be thought more in the light of whether the social environment effects sustainable consumption and whether the whole household consumes in the same manner.

The *economic* dimension is necessary to take along and will probably be noted as well, as the study concentrates on consuming energy but also attempts to save. Aiming for sustainability has an economic dimension all the way from producing to disposal, and costs money for individuals and the governments.

The temporal and developmental dimensions are from their descriptions very relevant, but are left out of study as the scope is mainly on private consumption, and these dimensions are something that could be thought of being slightly more important in producer side of the sustainability picture.

Support for emphasizing on these three dimensions was also found in a study by Salonen and Åhlberg (2013: 48), who state that for a high-consumption society like

Finland, three of the dimensions form the core of possible change in behavior and attitudes towards sustainable consumption. These three are the social, financial and environmental dimensions, so almost identical.

As already mentioned earlier, the terminology around the subject is also complex, and it may be difficult to define which products or type of behavior suit the criteria of "sustainable". Some literature even talks about how un-sustainable something is, but that was not the approach suitable for this study.

John Klein (2013) sees sustainability as something that is no longer for the consumer to decide up on. He does not aim to name a deeper reasoning for this idea of sustainability, as some kind of resource management has existed for many centuries. There are three pillars that form sustainability, energy, water and waste. In energy, the question of sustainability lays in its efficient use, enabling it to be a resource for additional capacity. Rather than trying to increase the supply side, utilities have understood the importance of strengthening the efficiency on the demand side. Even though this is the most reliable and cost-effective resource to increase capacity (compared to building new utilities for example), the costs are estimated to increase, because of the still continuing increase in demand.

Unlike many other authors, Klein (2013) had discussed water as a separate pillar for sustainability. Especially in literature concerning household, water is often included to the term "energy". Even though there is not an acute water deficit in Finland, parts of U.S are drying and development projects have been on hold.

The concern of running out of landfill space and expensive recycling makes it necessary to think about waste. There has been strong campaigning to decrease the use of material, but the possibilities of sophisticate reuse and recycling have been addressed already long time ago. This was one Klein's (2013) primary thoughts that it is unnecessary to think about sustainability as a term too thoroughly, as there has always been reuse and using material efficiently. The most important part is also to be able to reuse the already consumed material in an efficient way. This was very interesting, as most of the projects that have received attention concerning sustainability are in the developed countries, when the reuse of material on a private level may be bigger in the developing countries were resources are scarce.

The ’European Environmental Impact of Products’ Projects studied over 255 domestic products and their effects on the environment. 70-80% of total environmental impacts related to 1) housing (including domestic energy use); 2) food and drink consumption and 3) transport, which includes commuting and leisure and holiday travelling. (Peattie & Collins 2009: 110). These three groups seem natural contributors to the environmental impacts and are also the main areas of consumption to be concentrated on in this study as well. However, an interesting matter is that there are even specific products which do not have a significant impact either environmentally, socially or economically, but have been raised as symbols of today’s ‘throw-away’ society, plastic bag being one of these. Fairtrade coffee is an example of a socially and ethically correct considered product as it pays attention to the living wage of producers in poorer countries. (Peattie & Collins 2009: 110.)

Despite the importance of addressing the sustainability on the supply side, as mentioned earlier, this study focuses solely on the private consumption. The literary review of this study focuses on the first group of domestic consumption, the energy used for housing. The empirical part of the study will also have its main focus on the housing consumption, but to support the third objective of the study, the interviews will include question about these two other groups (foods & drink and transport) as well.

2.2. Sustainable consumption

Sustainability and consumption together are often defined as the ability of how long and to what levels one can sustain from spending, rather than the level of environmental sustainability of their consumption. However the definition for sustainable consuming remains vague and as mentioned earlier, the term is an oxymoron. Connolly and Prothero (2003: 277) refer to several reports which state the clear need to provide more information for consumers to increase their awareness of energy labels and their significance in purchasing decisions. (Connolly & Prothero 2003: 275–277.)

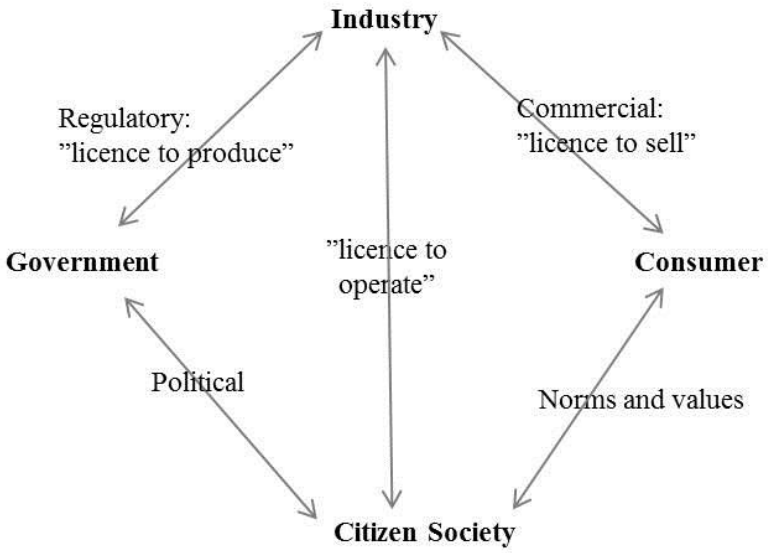

Figure 4. Parties involved in sustainable consumption (Adapted from Casimir & Dutilh 2003: 317).

Figure 4 by Casimir and Dutilh (2003: 317) aims to show the interactions of the various parties involved in sustainable consumption. The model separates consumers who actually aim to consume in a sustainable way and the citizens who have attitudes and opinions concerning society but cannot be said to be sustainable consumers. Note that both of these roles are usually present in each individual, but the roles never act simultaneously. This contradictory is discussed further in this chapter in more detail.

The consumer rarely has a direct relationship to the government, which is why the model only indicates a relationship to the industry and citizen society. The industry aims to develop and produce products and services to meet the functional and emotional needs of the consumers. The products need to meet the expected standards to be sold, which is why the consumer is said to provide a “licence to sell”. The actual rules and “licence to produce” are provided to the industries by the government, which is elected by the citizens. (Casimir & Dutilh 2003: 317–318.) The figure also shows the interaction between consumers and citizens, which can be defined the most delicate interaction in the scheme, and is also further presented in this chapter. This model could be connected to Figure 3, as these parties mentioned here could be roughly set under one of the dimensions.

Approaches to sustainable consumption can be identified by to what extents are they more ecologically orientated or aimed to deliver greater social equality (or both) to the existing patterns to consumption. *Status quo orientation* aims to continue the current trends of consumption, and to guarantee that they are not interrupted by social crises or environmental catastrophes. A good example of this approach is to motivate consumers to drive hybrid cars, however this change still encourages personal mobility and the automobile industry. (Peattie & Collins 2009: 109.)

Reform orientated approach aims to encourage to the use of completely new and more sustainable ways to meet the need of both individual consumers and businesses. One example would be to encourage the use public transportation. *Transformation orientated* approach seeks to transformational change in the pursuit of sustainability by societies and economies via urban planning. (Peattie & Collins 2009:109.)

The line between status quo and reform orientation may be vague, depending on how they are viewed. One could say that the hybrid cars support the reform orientation and the encouraging of public transportation would fit the status quo orientation, unless great changes in the pricing and usability are introduced. The Bo01 project in Malmö and the example of this study, apartment building Adjutantti have clearly approached sustainability in a transformational orientation, and perhaps act as good vanguards for a broader change.

As mentioned earlier, housing and transportation where two of the biggest areas of consumption having environmental effects. They have also been the targets of active campaigning. In past years, the third biggest area of consumption, food, has also received attention. Megicks, Memery and Angell (2012: 265) suggest that this is partly because of increased consumer awareness of food supply chains due to crises like Food and Mouth Diseases. A recent example to increase fear of food safety and gaps in communication was the scandal of horse meat found in steaks and convenience food. A more thorough investigation showed that many middle men in the supply chains were not aware of the origin of the meat. In addition to this, consumers simply have increased there their expectations on food quality and the social responsibility and ethical dimensions of what they consume. These together have formed a good platform for down streaming the food supply chain and for the growth of local food.

Food is one the areas of consumption addressed in the empirical part of the study to answer the third objective. For the other areas of sustainable consumption the linkage

between living in Adjuntatti and behavior may prove apparent, but for the food consumption, there is no useful data for such as specific group of consumers to be able to make any sort of assumptions.

Paliwal (2012: 238) argues that sustainable consuming in buying such products can be construed as altruistic (associated with status) as they often cost more and may be weaker from the functionality as the conventional counterparts, but these sustainable products do benefit the environment for everyone. This statement wasn't fully supported by other authors, especially when thinking discussing topics like the housing and food. It will be interesting to see whether status or altruism is something informants in this study are concerned of.

2.2.1. Challenges of sustainable consumption

Most consumers relate and especially say to think of sustainability in a positive manner, yet passively (Salonen & Åhlberg 2013: 48.) This gap in attitude and actions may be a cause of several factors, and this study aims to point out the most common ones.

In the existing consumer research, sustainable consuming has been studied in the context of motivational tendency of individual consumers. Motives are generally understood as the reasons for a particular behavior. Figure 5 presents the elements and dimensions of motivation and ability, which result in behavior and was done based on two different sources which support one another. There are two distinct motives, the primary motives which are the reasons for engaging or not engaging into sustainable consumption. The selective motives are more specifically the reasons to which are of sustainable consumption they want to engage in. (Moisander 2007: 404–405.)

Behavior is also dependent on the ability to perform these chosen ways to consume in a sustainable way. It is dependent on personal resources (money, time, tools) and opportunity created by the environment (Moisander 2007: 404–405). Salonen and Åhlberg (2013: 48) have done a similar division factors affecting behavior, but refer to personal factors (values, attitudes and beliefs) and contextual factors. Both emphasize the importance of ability, as the lack of if may prevent people adopting sustainable activities, regardless of their positive attitudes.

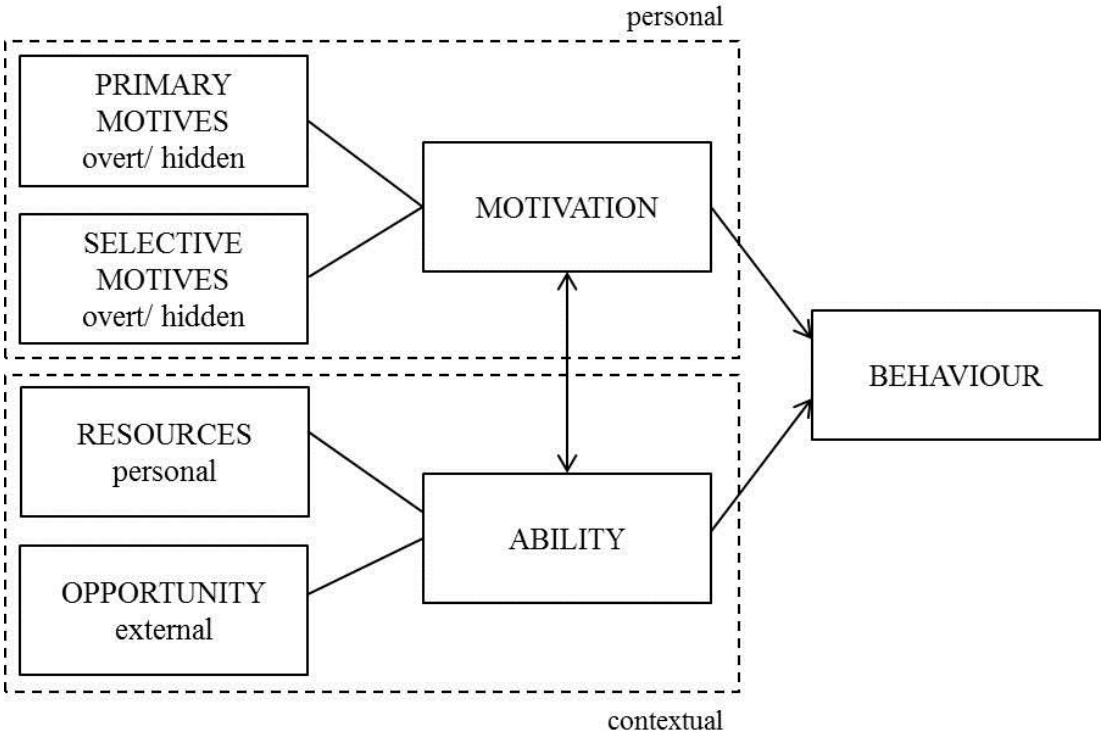

Figure 5. Motivation and behavior. (Adapted from Moisander 2007: 404; Salonen & Åhlberg 2013:48).

A study by Kennedy, Krogman and Krahn (2013: 359) emphasize on the importance of the external opportunity, as they believe the neighborhood and environmental attitude are the strongest predictors of sustainable consumption practices. Their findings also showed that engaging into sustainable activities in everyday life was more difficult in suburban areas, which gives support to projects like the Bo01 in Malmö and Adjutantti.

This study has identified and collected four different problems most commonly mentioned in literature concerning sustainable consumption. Firstly, there is a great amount of different views and strategies on what sustainable consumption is. Most radically it is withholding of purchasing anything, and the others consuming as usual, but choosing the products that have been less destructive for the environment. Also, despite all the labels for products, there are no general agreed-upon criteria for how to determine and sustainably safe and sound product or service. (Moisander 2007: 405.) Even more related to this study, it seems obscure in practice to estimate how much energy has been used in producing the goods and services.

Secondly, there are also a number of ways to engage into sustainable consumption. As already shown, there are several kinds of approaches to sustainable consumption and

consumers from everything in between. The next subchapter aims to show an example, how some have attempted the categorization of consumers. However, the conceptions of what sustainable consumption is may vary, whether it is the behavioral elements that should be involved, or what it the importance of each behavior. These elements vary greatly because of their lack of knowledge on what this behavior should be, they choose not do act so or they are not capable of doing so. (Moisander 2007: 406.) Routines are important aspects of energy and water consumption. However, trying to change people's routines may prove difficult. All of the technologies in our homes have gone through phases when they were new and fascinating, and were able to showcase wealth and social status. (Gram-Hanssen 2008: 1183.)

The lack of knowledge was also recognized as one the problems, but it is not necessarily the person's own lack of interest of gaining information. This is interesting, because it works two ways, meaning that to be able to reflect on your own consumption, the consumers must however be aware which parts of their consumption are unsustainable, and what they could do differently. Moisander (2007: 406–407) points out that in order to form personal selective motives for sustainable behavior and identify the relevant effects of their consumption, it is necessary to aim to understand and analyze the information and arguments about sustainability. Understanding the complex environmental effects of ones actions requires specialist knowledge. In addition to this it may require practical skills, such as where to take old batteries and how to read the meter measurements at home. Past unsubstantiated environmental claims of sustainability promotion have also resulted in sceptic attitudes.

Fourthly, as already pointed out in introduction, the founding idea in sustainability is the collective thought of leaving something for the future generations. Moisander (2007: 407) argues that sustainable consumption is motivated by two different goals, the individual objectives and the collective long-term goals, which makes it hard to commit to. Clean environment and fresh air are collective goods, but for remaining clean and fresh, these need the co-operation of consumers and behavior that is committed towards these goals. However, because of the difficulties mentioned in previous paragraphs, people are willing to take a free-ride and let others behave in s sustainable way.

The main challenges for sustainable consumption are;

1) The unclear nature of sustainable consumption
2) The numerous ways in how to engage into sustainable consumption
3) The amount of information one must have to able to analyze their actions

4) Sustainable consumption is influenced by both personal and collective objectives.

To further contribute to how complex the situation is, the strength of motivational perceptions was proven also in a study conducted by Paliwal (2012: 240–243). Paliwal tested whether the driving experience of people changed regarding which car they thought they were driving; a petrol car, a natural gas car (CNG) or a simulated CNG car. Informants rated the driving experience very differed depending on which car type they assumed they were driving. They were actually given false information and they only thought they were driving a CNG car, when in fact they were driving a petrol car, which was always ranked high. The study only proved that the sole impression of driving a CNG car has a clear impact on the driver's rating. (Paliwal 2012: 240–242).

As already suggested previously, one of the matters adding complexity to sustainable decision is social influence. Salazar, Oerlemans and Stroe-Biezen (2013: 172, 178–179) state that consumers do not act as independent units. Their behavior is shaped by social groups they are involved in and these specific groups have in fact a greater influence than factors like price and environmental concern measurements. Salazar et al. (2013: 178) further continue that the more close the social group, the more weight it has on the decision process. These close social groups are identified as family and friends, and their opinion had a significant importance in decision to purchase, believe information and make sustainable decisions, especially in the long run.

The peers' choice for sustainable products seemed to have a strong effect but only in the short run, while their reasons for purchase was less significant. However, the study also points out that women appear to be more sensitive to information from both of these social groups, whilst men consider more the economic resources. It was also suggested that even if men and women have same habits in consumption, they may value them very differently.

These social groups could therefore have a strong impact on the feelings and emotions of a consumer, which may have just as strong impact on behavior as the primary motives showed in Figure 5. Because of the abstract nature of measuring feelings, they are not mentioned in Figure 5. However Moons and De Perlsmacker (2012: 198) suggest that they have a stronger impact than attitude.

2.2.2. Grouping sustainable consumers

The literature related to green consumers and sustainable consuming has been eager to categorize consumers by which strategies they are greening their lifestyle and consumptions. The categorization in more specific is often made by using either behavioral constructs (what kind of activities are done and how often) or attitudinal constructs (what are the intentions). (McDonald, Oates, Alevizou, Young & Chu-Ang 2012: 447–448.)

The identification of typologies shows that literature is slowly moving away from treating green or ethical consumers as a homogenous group with mutual intentions and purposes. On the other hand it does complexify the view of people aiming for sustainable consumption, but yet there is no need to determine which approach to segment the consumers is better than the other. (McDonald et al. 2012: 448). To provide a realistic and more useful picture of sustainable consumption, McDonald et al. (2012: 449–450) suggest that these approaches could be layered together. To support this assumption, they found that most consumers actually balance between grey and green purchasing.

Translators do not see sustainability in a holistic way and are not motivated by a political agenda. Rather they are trying to do what they perceive being the right thing to do and are open for change even though they are not actively seeking it. Translators are ready make sacrifices to a certain degree if there is a clear justification for engaging to a new routine or even a less convenient activity. After going through the process of changing a particular behavior or routine, they may even experience guilt or regret for not reacting earlier. Translators often focus on the most tangible aspects of sustainability, and may be active in composting, but not using the local recycling facilities. However, translators are likely to think about their lowering their water and energy use, which makes it relevant for this study. (McDonald et al. 2012: 453–454.)

Exceptors are the consumers with the most sophisticated understanding of sustainability and may even have designed their lifestyle to implement a personal philosophy of consumption. They aim to achieve the smallest environmental impact by thinking what they eat and where they live. However, research shows that even exceptors have at least one aspect of their lives in which they behave like grey consumers. (McDonald et al. 2012: 454). Without a doubt, there is a group of consumers who can be classified as exceptors, but what are the chances that this type of consumer lives in newly build

apartment in close to malls and hypermarkets? There is also little possibility to be self-sufficient in areas of consumption, which is why this group may not exist in Adjutantti.

Selectors can be said to be the largest group in numbers of consumers, when compared to the two mentioned above. Selectors tend to choose an aspect of sustainable consumption on which to focus, and can be said to be green in solely this aspect in their lives but grey in all other respects. The Selectors do not see sustainability as a holistic was as the translators, and are motivated by a single issue. They do not see their behavior as contradictory. (McDonald et al. 2012: 455). Several other researches support this being the most common type of consumers (Gram-Hanssen 2011; Alberini, Banfi & Ramseier 2013.)

To point out, there is no strict agreed on categorization of sustainable consumers, but this grouping above is a good example of consumers could be grouped in a simple manner divided by practices and manners. This categorization is also a good guide in planning out the empirical part, as it suggests that despite someone being cautious on what and how they consume, it is necessary to go through consumption habits in the other areas of consumption as well.

2.3. Sustainable consumption in the context of household energy consumption

Even though energy consumption is recognized as a critical part of sustainability, the focus has been industries and corporate responsibility, on the supply side. The energy consumption of household and its linkage to other practices of sustainability remain unclear. These practices comprise technology use, technology linkages of single appliances with broader infrastructures of energy (such as water) and so on. (Gram-Hanssen 2011: 63.)

What makes energy consumption interesting is its invisibility and abstract nature. Energy is mostly something that is consumed indirectly via another product or means that then fulfills the needs the needs that are aimed to be satisfied by consuming. Belk, Ger and Askegaard (2003: 329) simply explain needs as something fairly fixed, necessary and related to the body, whilst wants are something necessary for the mind, and are wishes and personal preferences. Based on this information and thinking about in what energy is needed in everyday lives, it is evitable that by consuming energy,

people are fulfilling both needs (keeping the house warm when cold) and wants (long shower and baking hobby).

Over the last 20 years Scandinavians have been bombarded with campaigns to influence their behavior to a more environmentally friendly manner. These campaigns have aimed consumers to buy energy-saving bulbs, reduce stand-by consumption and turn of the lights when not being used. Environmental awareness is often seen as the consumption of green or labelled products, rather than withholding from the consumption or use of certain products. (Jensen 2008: 353, 358.)

Consuming and purchase decision are usually the end result or action to the first attention and then gained interest towards a product or service. But the interesting point in energy was that it couldn't be restored and the amount of future consumption is difficult to estimate. So the consumers don't do the usual steps that lead to purchase or consumption, and the electricity for instance is always paid afterwards.

In energy related products and solutions it might be that many consumers do not even get to the first step, which would be gaining interest towards a product. But what if the consumers are given the technology and tools for sustainable energy consumption without them having made the purchase decision? This may also be the case with the apartments in Adjutantti, as it could be assumed that many current residents where not particularly looking for an energy efficient apartment. They may have required the energy solutions without purpose, if their main attention was in other matters related to buying a new apartment. These modern housing techniques may require habitants to engage into new consumption patterns right after moving in and they may have grown interest towards the technologies and developed a desire to want more similar choices.

2.3.1. Challenges of sustainable energy consumption

Previous research suggests that many people are not motivated into energy saving by environmental reasons or even the financial reasons. People are not solely rational energy consumers and both needs and wants are satisfied through energy usage (Gram-Hanssen 2008: 1185). These challenges are to some extent similar than what they generally are in sustainable consumption, with the difference the energy consumption is something on going, often not a product specific choice. Below are identified some of

the most common challenges for sustainable energy consuming recognized from literature.

One of the most profound obstacles for not consuming in a sustainable manner was the lack of knowledge from now on referred to as *informational challenge* as it holds many different elements in it. A study conducted by the Ministry of Employment and the Economy, or MEE, (2013: 25) reveals that 32% of people living in apartment buildings in Finland were not even aware how their house was heated (usually electricity or district heating). As comparison, the percentage for townhouse dubiety was 8%, and as expected, all informants living in detached houses knew how there house was heated. This is clearly something that has to be addressed also later on in this study. Despite Adjutantti being an apartment building, it could be that because of their previous form of housing, their knowledge is better than the average presented by the MEE.

Along with water and heating, consumers rarely seem to know how much their annual electricity consumption is. Even though many consumers follow their personal accounts and meters, they only compare the figures with their personal consumption one year earlier. They were not aware of their neighbors' consumption, nor the general averages of similar households. It is also suggested that meters do not have a direct impact on energy consumption pattern. (Jensen 2008: 357–358.) This suggests that the consumers do not lack the knowledge on how to save energy, but are unsure what benefits the energy saving results and how big their effect on the environment is compared to others.

Even though the lack of knowledge is broadly used as a reason, it is contradictory that consumers still feel that they have enough information of other factors, such as price and offering. A large survey conducted by Vaasa EMG shows, that Finnish consumers are aware of prices and clearly more than half believe they have enough information about environmentalism. (Pakkanen & Närvä 2011.) These results support the statement that consumers are not always rational, as the energy bills are a fair part of monthly incomes, but the hedonistic needs still need to be fulfilled.

Consumers are also facing the trouble of understanding what sustainable consumption in the context of energy consumption is. As mentioned earlier, many believe that environmental awareness is buying labelled products, and they fail to consider that what if they just held themselves from using or purchasing something at all. It is also common for consumers to believe that sustainable energy consuming is expensive (low-energy bulbs, housing techniques) and these financial factors are pose a *financial*

challenge as well. These are also relevant in household energy consumption, in which the withholding of consuming is important as there are no ways to reuse the consumed energy. (Gram-Hanssen, Bartiaux, Jensen & Cantaert 2007: 2885.)

Economic was also a dimension related to sustainability in general, and also Gram-Hanssen et al. (2007: 2885) support that the financial challenges are relevant in energy consumption as well. It is argued that people do find it difficult to hard to make decisions on energy solutions that require a greater involvement, solar panels being one. Some consider their economics only a few years ahead, whilst for others the house is a long term commitment and they make calculation for many years to come. This is where the solar panels for instance do not fit in, as is very difficult to estimate the possible profits and benefits. The biggest question, will they pay themselves back ever? This is linked to the lack of knowledge, but not only on an individual level, as information about solar panels for instance are difficult for even the producer to provide. To some extent this is related to the informational challenge, as it could be difficult to engage into expensive techniques and solutions if for instance the payback times are difficult to estimate.

The type of dwelling and heating system were labelled significant environmental practices, but also short showers and energy-saving light bulbs were mentioned as obvious conservation practices. (Alberini, Bandi & Ramseier 2013: 76.) A rather surprising reason for people not renewing their heating systems or housing technology was not only financial, but apparently also trust. People are fairly skeptical about new solutions and their effect on the environment. Some even believe energy labels and regulations are just ways to get these products and solutions sold and is referred to as a *political challenges* from here on. These doubts were also supported by the lack of consistency between different sources of information. The social networks' promotion and opinion was once again an important factor. (Gram-Hanssen et al. 2007: 2882–2885.)

Another challenge is the gap between attitudes and actions. A contradiction in Denmark was that the households in favor of policies concerning renewable energy and with the largest number of low-energy light bulbs, were in fact the ones with the largest energy consumption. (Gram-Hanssen et al. 2007: 2885). It is noticed that many actions are not done or at least not justified with the environmental concerns, but rather with *lifestyle* reasons like comfort, cleanliness and practicality. If there wasn't a gap between attitude and actions, meaning the hedonistic aspect would not be that significant, there would be

no need to have individual saunas and washing machines on every apartment in an apartment building.

People also tend to mention short showers, turning off the lights and washing clothes with a lower temperature as environmentally conscious actions. However, many people do not take into consideration all the things and actions they don't concretely have, which would have large effects on the household's energy consumption. Not owning a car, a dishwasher and not travelling are in fact good examples of being a sustainable consumer, but the reason for withholding from these actions was reasoned with money or health. (Jensen 2008: 358).

Gram-Hanssen et al. (2007: 2884–2886) also found other difficulties for consuming energy in a sustainable way. The *social* factors are also necessary, as already suggested earlier, social influence or even pressure may affect someone from consuming of not consuming in a way they would want to themselves. Some routines in energy consumption were also rules and behavioral patterns learnt from childhood, and these "unwritten" rules were not questioned later in life.

A challenge perhaps not relevant for this study but interesting in the conversation was aesthetics, which received surprisingly much attention when trying to prioritize energy project among renovations and building. The study shows that beautiful open staircases, the elegance of badly insulated single glass windows and the appearance of the roof were more important than energy issues, even with the ones who considered themselves as environmentally aware. People also felt like some of the newest solutions may 'harm' the identity of an old apartment for instance, if they had planned to renovate in respecting the age but to their taste. (Gram-Hanssen et al. 2007: 2884–2886.)

To conclude, actions in everyday life are valued very differently, some more significantly than others. Despite all the campaigns, there is still a general tendency of avoiding the most radical changes in habits and accustom into latest solutions, such as rainwater collection and solar panels. These are often seen too different and are associated with an alternative lifestyle. That is why persuasion on using environment-friendly products or practices cannot solely rely on the environmental qualities, as clearly they are not often the motivators.

An interesting target for research in a few years' time will be whether the possibility for precise control and monitoring for electricity consumption has made any difference for

Finnish consumers. By the end of year 2013, the electricity companies had been able to install remote electricity meters to nearly all households in Finland. These meters send hourly information of the household's electricity consumption once a day to the electricity company and this information can also be seen by the residents the next day. The biggest advantages for the end-consumers is that they can see the impacts of their actions (for example heating the sauna) more clearly and now they are charged for their actually consumption instead of estimations of consumption, as previously was. (Lassila & Pölkki 2014: 26.)

This new regulation and its requirements should make it easier for consumers to understand and compare exact figures, since the abstract nature of following energy consumption has been a major concern. There is clear need for visualizing sustainable energy consumption, and research suggests it could be done these everyday practices. The connections between consumption behaviors and environmental consequences from both production systems and consumption need to be clarified. To be able to reach specific goals in decreasing the level of energy consumption, the communication with consumers needs to be increased, thus promote sustainable choices and create reasonable incentives.

A study of Finnish consumers shows that the Finnish consumers value ways of saving energy. The use of renewable energy sources in the households has been recognizes as desirable, however many people feel this is the part where they have the smallest possibility to influence their behavior. (Salonen & Åhlberg 2013: 52.) This is partly true, as only those living in detached houses can influence the form of heating.

A notable appreciated way of engaging into sustainability was recycling and composting, which are highly valued. However the big contextual constrain was the lack of space to sort the waste inside the apartments and added to a personal laziness, only small percent consider recycling as a part of everyday life. (Salonen & Åhlberg 2013: 51.) A recent study also showed that despite high appreciation towards sorting and recycling, Finland is amongst the laziest countries in recycling in Western Europe (Lehtinen & Saavalainen 2014: 12). This supports the idea of there may often be a wide gap between attitudes and actions.

Water consumption has been noticed to be important and one the easiest areas to possibly decrease consumption, however strong personal preferences and self-

indulgence were obstacles to actually doing so. Long and hot showers have gained attention in international studies as well. (Salonen & Åhlberg 2013: 52.)

2.3.2. Differentiating energy consumers

As with grouping sustainable consuming and sustainable consumers, the grouping of energy consumers seems equally challenging. Gram-Hanssen (2008:1183–1186) does not support a strict categorization of private energy consumers either, but aims to point out areas and practices of energy consumption that differentiate households from one other and that make a difference in the amount of consumed. Gram-Hanssen suggests that household energy consumption could be categorized under following areas; comfort, hygiene, cooking and ICT (information and communications technology).

The indoor temperature is the biggest factor affecting the overall heating costs of a private household. People relate indoor temperature, whether high or low, with very different things. Some try keeping the temperature lower for health reasons, while others prefer warmth over possible savings and do not believe a warmer indoor temperature is any harm. Individual practices linked to what makes sense to the consumer, even though the heating technology would be the same in a large group of households. (Gram-Hanssen 2008: 1185.)

The practice of lighting on the other hand was more tied to cultural norms of coziness and interior design. These practices are also related to childhood norms. Research also indicates that people reflect more on lighting than the other parts of their energy consumption. This is not very rational, as the lighting on average counts for less than 15% of the total energy consumption in Danish household (Gram-Hanssen 2008: 1185). In Finland this figure is almost the same for apartments and townhouses (11-13%), but only 7% when it comes to detached houses. (MEE 2013: 24–26, 32.) It will be interesting to see, whether the informants in this study also emphasize lighting.

Hygiene, more specifically the washing and drying of clothes is still to this date considered something of which women are mainly in control of in households. Norms have been indicated to pass from previous generations, however the new technology has had a great influence in the routines and habits. The washing of clothes accounts for a fairly big part of time, when people aim to act responsibly (according to messages

received via campaigns) by lowering the washing temperature and washing only full loads. However, the questions of how often should clothes even be washed has been ignored. (Gram-Hanssen 2008: 1186.) Common to Scandinavian countries seems to be the very established role of the washing machine in households. The dryer however is still an unusual appliance in Scandinavian households, and less than 20% of households in Finland have one (MEE 2013: 17).

Cooking also separates households from one another by habits. The biggest factors for energy consumption are the freezer, microwave and oven. However not one without the other as foods to be prepared in a microwave or oven both need the freezer. They are all considered necessities and it is the frequency of preparing and heating of food that accounts. The microwave appears to have most negative thought concerning environmental effects. (Gram-Hanssen 2008: 1186–1187.)

The use of ICT (Information and communications technology) is interesting to examine, since there is no possibility for passed norms from childhood. The size, age and location of ICT devices in the house vary greatly. Commonly unknown to consumers is the fact that ICT devices consume over 90% of its energy while in standby mode. Aims to regulate the use of these devices are often related to the wish and assumptions of kids not only playing with their computers or chatting on the internet, rather than the thought of saving energy. (Gram-Hanssen 2008: 1187.)

As can be seen, the grouping of practices and chores related to energy consumption seems reasonable, as they are something that are in every household to some extent, but are also effected by individual needs, lifestyles and interests in general. The groups are also fairly separate, and the other does not have a direct effect to another.

Maybe further research is able to group the energy consumers by certain characteristics, but for now it seems like many variables and generalization is needed to make them. Already the range of challenges suggested, how different energy saving is seen, and with the differences in everyday routines and habit in different appliances and heating, makes the equation difficult. The inaccurate grouping of sustainable consumers in general is not completely unusable; however there are bigger obstacles for sustainable energy consumption than many other areas of consumption. Also notable is that none of the attempted categorizations is to take into consideration the life cycle. Is it even possible to try to compare the gap between attitudes and actions of a family with two small children and parents working full-time to a retired couple who have the time to

take the effort to act sustainably, and already closer to an younger couple by other consumption patterns.

2.4. Household energy consumption in Finland

The climate politics of the European Union have an impact to the everyday lives of Finnish people, even if it is not always considered obvious. The European Union recently set new goals to be executed by year 2030, which included a goal of 27% of all energy consumed should be produced by renewable energy sources. Even though the figure is only an estimate and does not obligate Finland to reach the same figure, it is evident that these goals are considered in the regulations done in Finland. (Kähkönen & Elonen 2014: 2.)

These goals set by the EU have already affected the regulation in Finland, for example the building and renovations of houses. New buildings have very strict energy efficiency requirements, and all new buildings are to be built "zero energy houses" by the year 2020. The regulations will also favor hybrid and electric cars, and will have an influence on automobile taxes. The appliances will have stricter efficiency requirements. (Saavalainen & Virtanen 2014: 6–7.).

Despite the fact that the regulations do not directly force anyone to change their behavior, they are hoped to impact choices as; people reducing travelling by airplanes, increasing public transportation, decreasing indoor temperature and reducing the use of hot water. The citizens are also encouraged to reduce the waste derived from food choices, and to choose vegetables and fish over meat and to favor local produce. (Saavalainen & Virtanen 2014: 6–7.).

In Finland there are specific guidelines in how to define the energy efficiency of a building. There are classes from A to G, A being the best. This energy group has to specified in the energy report of the house and it is commonly mentioned when marketing buildings as well. The efficiency is determined by the amount of energy the building needs for heating, appliances and cooling. (Sähköala 2007.) The energy efficiency of new buildings has clearly increased in the past four years in Helsinki from 21% to 68%. The criteria for the A class was changed in 2013, after which the building must have its own energy production (solar panels) to reach he A class. After this rule

was taken in to consideration, only one building fulfilled this criterion. (Ylä-Tuuhonen 2014: 8).

Further a bit more about electricity, as that is something which is a financial concern and affects both heating and appliances. As already mentioned earlier, by the end of year 2013, the electricity companies had been able to install remote electricity meters to nearly all households in Finland. These meters send hourly information of the household's electricity consumption once a day to the electricity company and this information can also be seen by the residents the next day. The biggest advantages for the end-consumers s is that they can see the impacts of their actions (for example heating the sauna) more clearly and now they are charged for their actually consumption instead of estimations of consumption, as previously was. Consumers now have more tools for monitoring their electricity consumption, in the form of recent figures and euro amount in the bill. (Lassila & Pölkki 2014: 26.)

This information has facilitates the usage of spot-pricing. Spot-pricing means the price varies depending on the time of the day (small hours being the cheapest). The division of electricity usage more evenly throughout the day would be beneficial for the entire electricity and distribution networks. (Lassila & Pölkki 2014: 26.) According to Helsingin Energia, this spot-pricing has already interested thousands of people, as they are able to set the washing machine to wash during the cheapest hours.

However, this is still not the case when it comes to water consumption, and the meter has to be read from a separate room with no possibility of comparing it to previous, unless the user themselves writes the figures down. In Finland it is also common to pay a fixed amount for water (in condominium), and for it remains unclear whether their consumption is even close to the estimated amount.

Even though the Nordic countries do not form a perfect homogenous group, there are many similarities in energy consumption due to climate and regulations. Several international trends in everyday routines have affected the Finnish electricity market as well. However, all the figures of possible decreases in certain areas of energy consumption does not necessary mean a new consumption trend, but a new technology to decrease the amount of energy being consumed. (Ministry of Employment and the Economy 2013: 5.)

A study published in 2013 on household energy consumption from 2011 by the Ministry of Employment and the Economy is a descriptive Finnish research that has concluded the trends but also taken into consideration the size of household, which other research lacked. The study describes change between the years 2006 and 2011. There hasn't been a great change in the amount of consumed electricity for example, but the ratio how much electricity was used for what has changed fairly much.

Figure 6 describes the end use of electricity in different types of housing. The end use seems the like most important and relevant to introduce in this study, as consumers should be able to somehow manage the consumption. It therefore lacks some information concerning the total energy usages as all heating is not done by electricity.

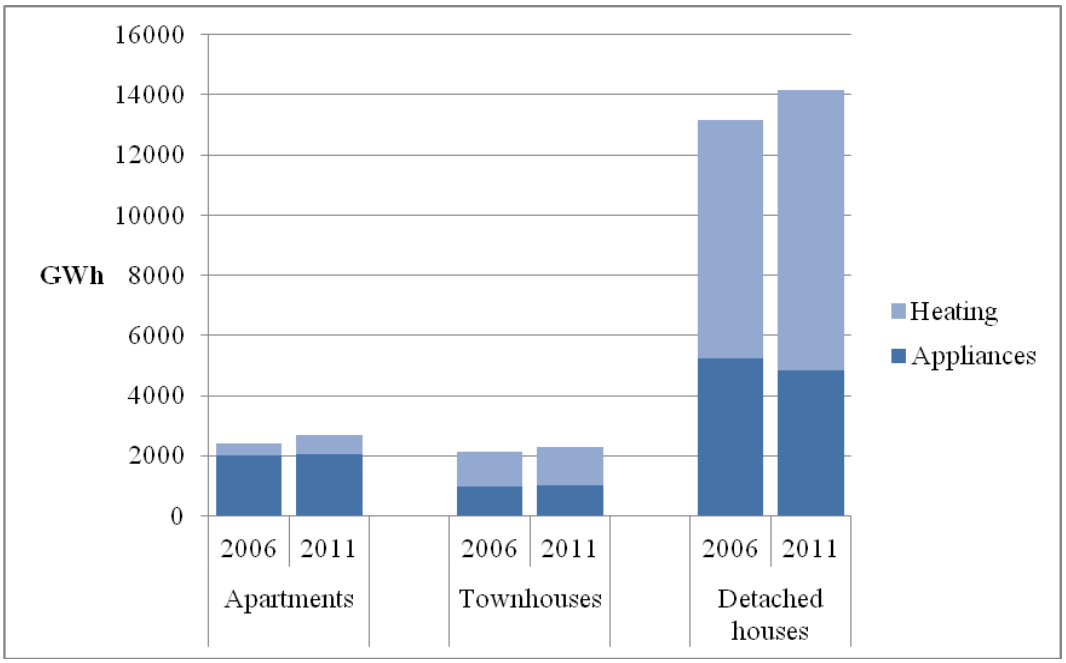

Figure 6. The amount of electricity used between heating and appliances.

As can be seen from the figure, 76% of the consumed electricity in apartments is used for appliances. In apartment buildings, the electricity used for appliances had not risen as much as the overall amount of apartments' had increased. The 76% consists of 27% percentage used for kitchen related appliances (oven and refrigerator), 21% information technology and 13% lighting. Only 24% of the total electricity consumption is related to

heating as district heating is the most common source for heating in apartment buildings. (MEE 2013: 24)

To underline, Figure 6 shows only a rough division of on how the electricity is divided. These figures are not to be interpreted too precisely, as many appliances may actually increase the room temperature, resulting is decreased need to turn on the underfloor heating. Smaller spaces also heat up more quickly, and cooking on a stove may warm up the house significantly. As mentioned the refrigerator and freezer are the second biggest components taking up electricity in apartments and lighting is the third biggest one, despite a decrease from 20% to 14%. The fastest growing area of consumption has been an electrical underfloor
heating. (MEE 2013: 23–25.)

In townhouses, the percentage of electricity used for appliances was 45% and heating 55%, very different to ones the apartment building. Most of the consumed electricity goes to the heating in townhouses, as it is a more popular mean of heating than in apartment buildings. Naturally of this, the heating water takes up the second biggest slice in the electricity use (district heating 57% and oil 8%). A smaller percentage of the consumption in whole also goes to kitchen appliances and other electronic devices. Unlike in the other housing examples, the electricity used for lighting has remained the same. (MEE 2013: 25–26.)

The numbers from the detached houses are slightly more challenging to understand and interpret, as heating is often from several different energy sources (electricity, wood and heating oil). (MEE 2013: 27.)

Figure 7 shows in more detail the change in between which appliances the electricity is nowadays consumed. The division has the same elements that were suggested by Gram-Hanssen (2008:1183–1186) previously, which set the differences between households in energy consumption. Figure 7 shows an average household of three persons in an apartment building, and in which appliances the electricity is nowadays consumed in.

Even though there has been a large decrease in how much televisions take up from the total amount, the electronics are now a bigger electricity spender than a traditional appliances, such as the refrigerators. This is simply because of the large increase of information technology apparatus at households. Despite the apparatus being renewed

into more efficient, the amount of new apparatus has increased so much that it outnumbers the savings from the efficient ones.

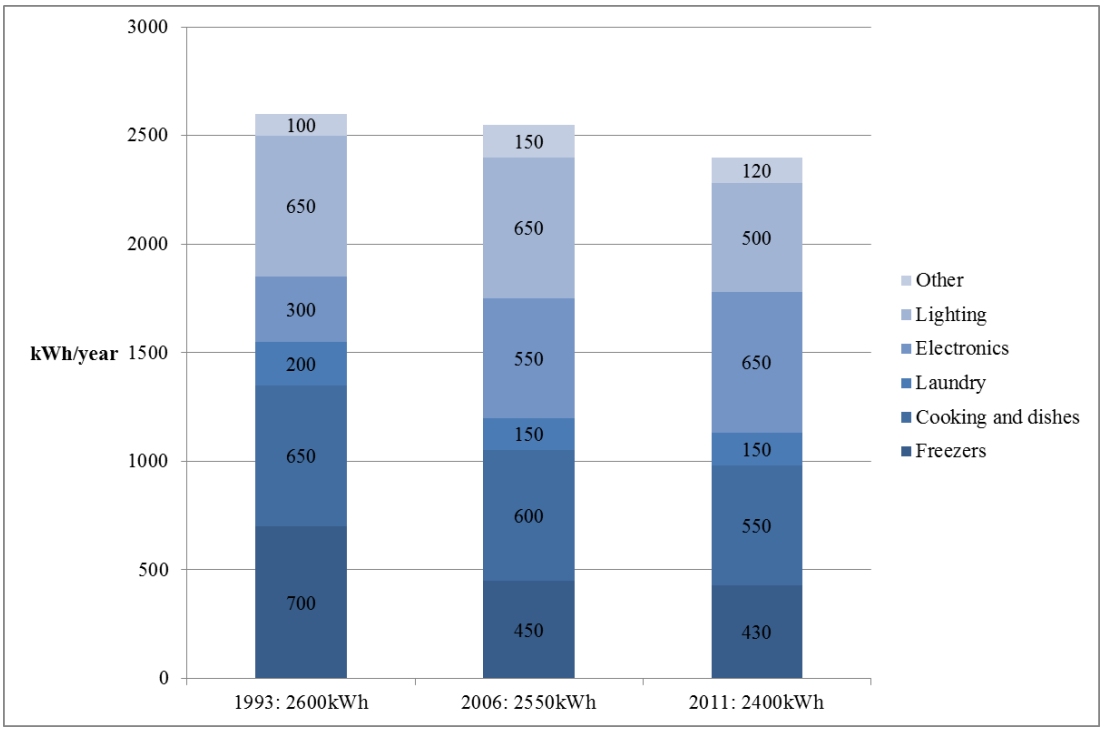

Figure 7. Electricty consumption between appliances. (MEE 2013: 36.)

In the scope of Figure 7, it could be suggested that the areas that receive most attention would be cooking and dishes, electronics and lighting.

As already mentioned earlier concerning heating, even the Nordic countries are not to be compared to one another too strictly, as there are some cultural differences. A simple example like the sauna culture in Finland, may result in big differences in household energy consumption when compared to other Nordic countries. Ylä-Tuuhonen (2014: 8) has also examined the differences in behavior and attitudes concerning the use of hybrid and especially electric cars in Nordic countries. The amount of electric cars in Finland is significantly smaller than in Norway and neighboring Estonia, which clearly out numbers the Finnish car market, even though the Estonian market is a lot smaller.

By September 2013 there were only 151 registered electric cars in Finland. According to research, the biggest challenge for the Finnish consumers is the price, which may be over 10,000€ higher than the price of the same car in petrol. Finland also lacks to give any incentives for the purchase unlike Norway, where electric cars do not have the usual automobile tax nor value added tax. The electric cars are also allowed to drive bus lanes and both parking and charge of the battery is free in public stations. This has resulted in 18,000 registered electric cars and 12% of sold cars in November being electric cars. Also in Estonia consumers are encouraged towards electric cars with a 18,000€ purchase support, a charger station home and a national charger network. Ylä-Tuuhonen (2014: 8) also states that car sellers do not actively promote electric cars and rarely have one for test drive.

Currently, there are none of these incentives in Finland for private consumers (a few supports to companies), and most abandon the idea of an electric car due the financial reasons. However the ones who have been able to purchase one, have been very pleased with the costs and use. The savings reach thousands of euros per year with a daily drive of 50 to 150 kilometers. (Ylä-Tuuhonen 2014: 8.) Interesting is that in addition to appreciating the simple use and reduced cost, electric car owners pointed out the silence of the car.

2.5. Summary

To be able to continue to the empirical part of the study, it was necessary to answer the first objective of the study; *what challenges does sustainable energy consuming bring to everyday life and why is it seen so difficult?* The aim was to deepen the knowledge of the subject from more general to specific, covering the subjects necessary to answer the objective and to identify the possible challenges.

The dimensions of sustainability were recognized, and they are considered when moving to the methodology chapter and designing the interview. Several challenges relating to sustainable consumption were identified, and some of them were similar to the ones that were identified in the context of energy consumption.

Figure 8 pinpoints the identified dimensions and challenges that are involved in both sustainable and sustainable energy consumption. As mentioned, there were some

similarities, but the ones concerning energy consumption are more specific; *informational, financial, political, lifestyle and social challenges.* The challenges for sustainable consumption in general are something that may be recognized when uncovering the other areas of consumption, food, transportation and waste sorting.

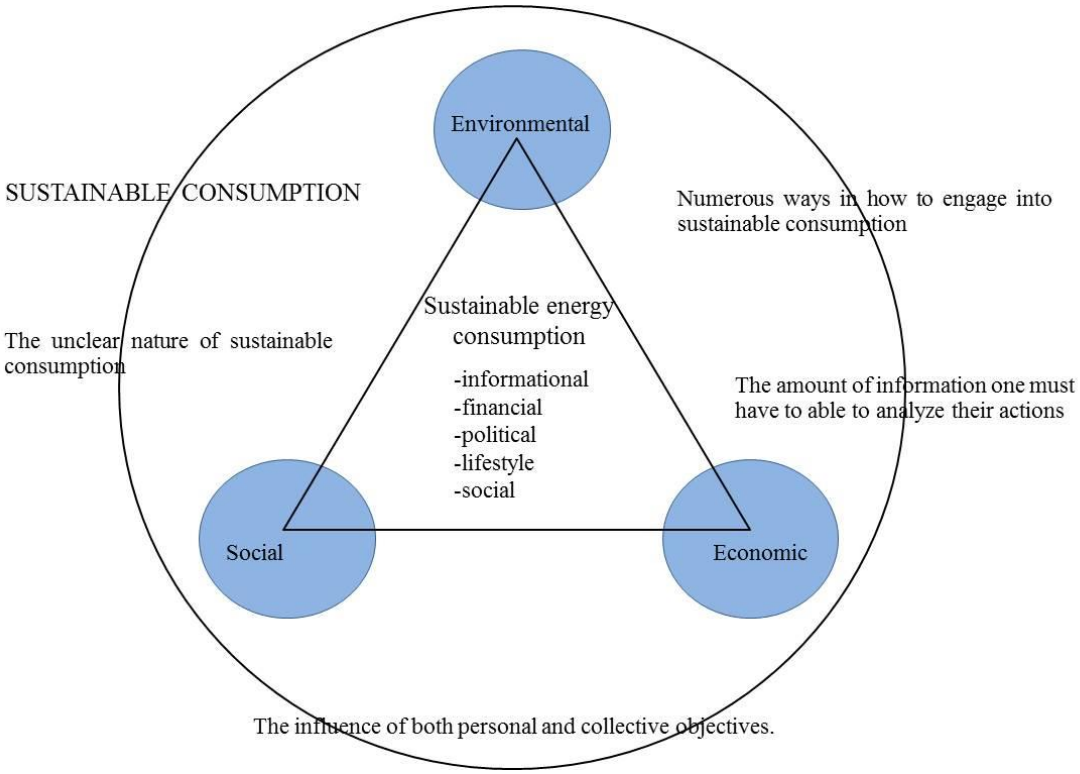

Figure 8. Summarizing the identified challenges and dimensions.

Despite representing possible ways in which consumers could be grouped, a sole categorization was not found in either. The grouping for sustainable consumers was interesting and something to keep in mind for later on, but the grouping of energy consumers was left on a suggestive level, and representing the everyday practices that could be used in grouping.

The chapter also gave an insight to what and how Finnish households consume energy in everyday life and which factors impact the way they consume energy. It was good to find accurate data as there were some differences in energy consumption between the

Nordic countries. This literature from previous studies will be reflected to the findings of this study later. After having answered to the first objective of the study, it is now possible to continue to the empirical part of study.

3. METHODOLOGY

The previous chapter built theoretical understanding by studying what are the dimensions of sustainability and sustainable consumption, and more specifically what are the difficulties for sustainable energy consumption in everyday life. Sustainability had to be considered from several dimensions, of which the environmental aspect seemed to be the most appropriate in this case. However, the other dimensions can't be neglected in the empirical part either. The Finnish private energy consumption was also presented to understand what a Finnish consumer values and which factors shape the behavior.

The basis of a qualitative research is the description of the reality (Hirsjärvi, Remes & Sajavaara 2009: 161). The purpose of the thesis is to understand the complexity of sustainable energy consuming, to see what energy means to residents in Adjuntatti and to uncover possible new areas of sustainable consumption. This is why this study is based on qualitative research, because these personal meanings and descriptive answers would have been difficult to obtain via quantitative questionnaires for instance.

According to Hirsjärvi et al. (2009: 164) the typical characteristics of qualitative study is the comprehensiveness of the data collection and its collection in natural and real life situations. This is why several interviews were conducted to this study, and in the informants' home, in the place which is also the object of examination. Previous research has focused on uncovering how people reason their purchases, their opinions about sustainable consumption and the correlation of actions and talk. Many studies also focused on the responsible consumption of food and clothing. However, a few of them did study questions like what people believe about new solutions in building techniques, their willingness to spend money on collective goods and possibly save money in the long run. These were essential for this study in identifying the challenges, both actual and perhaps imagined. Using people for gathering information is also one characteristic of qualitative research and in this study the interviews and conversation will be the source of information. (Hirsjärvi et al. 2009: 164).

Given that only little empirical research has been conducted in the area of sustainable energy consumption, more specifically in an energy efficient building, it was necessary to choose a research paradigm that allows for exploratory research. Therefore, this study was conducted as a qualitative research and the findings were derived from in-depth

interviews. The aim was not to prove any set hypotheses. The research method that enables to gain an in-depth understanding and allows making interpretations of human actions is phenomenological hermeneutics. Phenomenology studies experiences which can be seen to shape from meanings (Eriksson & Kovalainen 2008: 19–20).

Another common characteristic for qualitative study is an inductive analysis in which conclusions are made from single to general. (Hirsjärvi, Remes & Sajavaara 2009: 164; Heikkinen, Rovio & Syrjälä 2008: 88). This however depends greatly on how comprehensive the sample is.

3.1. In-depth interview as a research method

Interview is one of the most used research methods, during which the researcher and the informant discuss about the things related in the research topic either in a structured or discussing manner. (Hirsjärvi & Hurme 2001: 47.) As a difference to a normal conversation, an interview has a clear aim; to find out the opinion or motives for certain actions of the other party and informant (Eskola & Suoranta 1998: 85).

Interviews can be categorized with different reasoning, but one of the most common ones is based on how structured and planned the interview is, more specifically how much can the interviewer react on the moment and how specific the questions are. A rough bifurcation is 1) questionnaires, which are fully structured interviews with set questions and answer options and 2) semi-structured interviews and un-structured interviews with different types of questions and no ready answers. (Hirsjärvi & Hurme 2001: 43–44). The question of how formal an interview should be depends on the information trying to be attained. For this particular study a semi-structured form was necessary to gain new information. The interview proceeded within certain readymade themes. These themes were decided upon the previous research and literacy review and the opening questions for each theme are often broad. It was important, that the decided themes were discussed with all the informants, but the questions in the interview guide (Appendix 1.) were mostly ideas and supporting questions in case the discussion would not have proceeded naturally.

In an in-depth interview the interviewer and informant are in interaction with one another and the interviewer aims to create a natural setting for discussion. The interview

and discussion proceed naturally within these certain themes. The informant must be given time and space to reflect on their feelings and memories. This is also why the opening questions are often broad, to ensure the informant says what is in their mind without leading them too much. However, it is the responsibility of the interviewer to keep the conversation on the correct path towards the set goal, and to react and respond to the given answers. (Hirsjärvi & Hurme 2001; Eskola & Suoranta 2008, 86–88.) For an interviewer to be able to react and ask spontaneous questions, a good knowledge of the subject is vital, which is also why a thorough literacy review of the subject was done before any questions for the interview were planned. An interviewer may have some additional questions or bullet points on a separate piece of paper to help remember all the themes or a few additional questions.

Ethicality should always be considered when doing qualitative studies, in both data collection and analysis phase. In this particular study, ethical concerns were minuscule. All the informants for this study had participated out of their own will, and no one was obligated to sign up, however a few of them were reminded about the interview. According to Alvesson (2011: 112) this is a strong factor when considering the ethicality of a study.

The interviewer and informants were also in a fairly equal position in which no personal information was shared in beforehand. The interviewer did not have to tell false information nor were the questions so personal that they could cause an uncomfortable situation. To ensure good and truthful answers, the informants were not informed clearly about the objectives of the study and the purpose in beforehand. In the analysis part the most difficulty was in keeping the anonymity of the informants, as there were not that many.

3.2. Introducing Adjutantti

Some main reasons for why household energy saving is still lacking interest in the sustainability discussion and why it is seen challenging were showcased in previous chapter. However, as mentioned earlier also the changing regulations force builders to apply new building techniques and technologies to new buildings. A small scale but an advanced example from Finland is the Adjutantti building in Espoo, Finland. Even with

the more strict energy standards, Adjutantti still remains in the A category for energy efficiency.

Adjuntantti is an apartment block building situated in the city of Espoo in the capital region in Finland. Completed in spring 2012 this building is part of the Sustainable Urban Living concept, a collaboration of Skanska, Fortum and ABB. (Rakennuslehti 2011.) The building itself produces energy with the solar panels on the roof. These panels were estimated to produce about 15 000 kWh of electricity per year, which is then used to heat and light up the common areas, such as hallways and elevator. After a two year monitoring, the solar panels have actually exceeded the amount needed for the common areas. The surplus is nowadays sold to Fortum, a Finnish energy company which then distributes it back to the grid. According to a member of the condominium, the amount of money resulted from selling this energy has however been only some tens of euros per year. It is also estimated, that the solar panels need to be changed into new ones in ten years' time.

The Adjutantti building and its 42 apartments ranging from 53,5 m^2 to 121 m^2 is on the forefront of eco-efficient homes in a global scale with its solutions. The five main energy efficient features of Adjutantti were the monitoring system of energy information, housing technique, electric car, solar panels and elevator (Skanska 2011). The three areas of everyday energy consumption being affected by these mentioned technologies are heating, electricity used for appliances and transportation.

The monitoring system enables the residents to follow energy consumption in two ways. A monitor in the apartment gives detailed information on ad hoc and recent electricity, water and heating consumption but also the outside temperature and clock. It is also possible to follow online the apartment's individual cumulative energy consumption as well as averages of energy consumption in the long run. The online portal also enables the habitants may also find how much the solar panels have been producing as well as the consumption of individual appliances. (Skanska 2011.)

As earlier suggested by Jensen (2008: 357–358), people are having difficulties in saving energy because of its abstract nature and the lack of specific information and accurate estimations. This equipment should provide help with that problem, but it will be interesting to see whether this has facilitated the saving or not. It however does not give accurate estimations in euros, or display the ratio between hot and cold water (and the costs) and an estimation of total electricity consumption for the coming year.

There has also been a lot of discussion about how much several appliances consume energy in their stand-by position (Gram-Hanssen 2008: 1187). Adjutantti's solution to this is the "Home–Away–Long Away" switch which controls the lighting and the electrical equipment connected to that system. When the switch is set to "Away" or "Long Away", it turns off certain electronics attached to specific plugs and decreases air conditioning and heating. It is especially useful if the house is left empty for a longer period of time, however it is designed to be used on a daily basis as well (Skanska 2011.) Some possible difficulties of this switch is that certain electronic devices have to be placed close to these particular plugs and need new settings every time they are switched off.

A one Celsius decrease in room temperature results in a 5% decrease in energy consumption. Adjutantti is very well insulated with thicker walls and good windows and doors. This is to ensure that heat does not escape easily through the structures. This apartment building, like most others also has district heating. The ventilation system is equipped with heat recovery. The "Home–Away–Long Away" switch also targets the room temperature. The thermostats aim to decrease the room temperature when the switch is turned and also maintain a steady room temperature when in the house. As an idea it was seen beneficial, however proper feedback on how these thermostats have really performed remains unclear. In case of malfunction and the room temperature being too warm, the windows would have to be kept open, resulting in loss of energy.

The solar panels on the roof are not a direct benefit for residents' individual everyday energy consumption. They do not directly have an effect on their behavior, however the condominium's bill remains minuscule. (Skanska 2011.) These solar panels were often mentioned when marketing the houses, even though it is something the residents do not have a control on. Solar power is generally recognized as a clean and self-sufficient way of producing energy, and is something many people are strongly for. In this case these solar panels represent a collective good. However, it may not be clear how this solar power is actually used, how much it saves money in euros and would the residents be willing to pay this technology out of their own pockets.

An automated elevator also saves energy generated from the breaking and uses it for the same mutual targets as the solar panels. The intelligence of the elevator is linked to the key with which a resident can open the front door. When showing the key, the lights in the hallway turn on, and the elevator is called automatically and it also takes to the correct floor without extra effort. (Skanska 2011.)

For a year after the building was completed, the residents had a chance to test and use an electric car, which got a share of its energy from the solar panels on the roof. The car could be reserved for a specific time, and was found very useful among some of the residents. After the one year free try ended, the condominium relinquished the electric car, because only a few households were ready to contribute to the expenses and maintenance of the car.

3.3. Data collection

For this study the data was collected by the in-depth interviews, which were conducted to seven households in Adjutantti. All together 4 in-depth interviews were conducted face-to-face, with those households that had volunteered and contacted themselves the quickest. All these interviews were conducted in the informants' own apartments. All the visits took over an hour, however the taped talking ranged from 43 minutes to one hour and 4 minutes. In addition to the four face-to-face interviews, 3 more interviews were done on the phone two weeks later. This was purposely done so that there was time to see whether there was something that had not been taken into consideration in the previous interviews. These phone interviews where slightly shorter, ranging from 32 minutes to 46 minutes. The interview guide (Appendix 1.) was the same for all informants.

In all the interviews, the talk was recorded, so the interviewer could be able to respond and react in the conversation instead of taking notes. All the interviews were also carefully transcribed soon after. However, there were some discussion that was not caught on tape, as a few residents were eager to demonstrate the monitors, and a few informants started casually talking about their housing technique before the tapers were set. Even though the purpose was not to make too strict observations, the interviews were transcribed so detailed, that possible feelings could be interpreted.

All the interviews were done in a few week timeframe in winter 2014. Despite the small number of informants, some parts of the interview started saturating already during the third interview. Even though the themes and questions had been answered very thoroughly, some of the richest opinions and ideas for further development were received after the informants were told that they could now mention anything that had

been left uncovered. These are not necessarily relevant for this particular study, but beneficial for future research and partners involved in Adjutantti.

Out of 41 apartments that have residents, 7 households are represented in the study. Despite not intentionally targeting different types of household (apartment size, informant's age) the study was able to get a sample from all the different apartment sizes. The table summarizes the informants, but the number given in front of the informant does not represent the order in which they were interviewed in, or whether the interview was done face-to-face or by telephone. The F and M stands for whether the informant was male or female, and the number after it the number of members in the household in addition to them.

Table 1. Information of the informants.

Household	Informant (+members in household)	53,5m² - 65m²	86,5m²-88,5m²	121m²	Summer cottage or similar	Returns on estimated bills
1	F(+3)			X		
2	F(+1)		X		X	X
3	F(+1)	X				X
4	M(+1)		X			
5	M(+1)		X			X
6	M(+1)			X	X	X
7	M(+1)		X		X	X

Age was not relevant to be mentioned here, but the representation of age and households match pretty well the actual distribution in Adjutantti. The reason for indicating the summer cottage and return on estimate bills will be specified later in this chapter.

3.4. Data analysis

This study used content analysis as a type of qualitative data analysis. According to Tuomi and Sarajärvi (2009: 91–92) content analysis can be seen to be a ground for most different analysis methods, when it is considered as a wide theoretical framework for the analyzing of written, heard or seen content. Essential for content analysis is the

researcher's decision on what in the data is relevant and interesting for that specific research. The decision of pointing out which parts are relevant or not should be based on the purpose and aims of the study.

Transcribing is an important part of content analysis. In this study all the interviews were taped, after which they were transcribed to ease the analysis. The transcribing was done as specifically as possible when it came to speech. That is why the transcribing is both selective and exact transcribing, as no words were changed and all small words were kept to express the feeling. (Hirsjärvi & Hurme 2011: 138). Some talking in the beginning and end were left out (if they concerned the weather for instance), but also coughing and sneezing. Some parts, like which appliance the interview was pointing were necessary to write. An exact transcribing also enables the use of the material later on. It also clearly indicates which themes the informants most told about and how much they knew. A slight fault of the study is that the interviews were done in Finnish, and the quotations used to tell about results have been translated to English. They have gone through a careful translation, and answers with even a slight chance of having a different meaning in either language were not used.

Already in the transcribing phase the anonymity of the informants had to be considered so they are not identified. Some of the informants however clearly stated that they would not be bothered even if their names were mentioned but out of the respect for the few others, all the names were left unmentioned. There was a minor difficulty with coding but still being able to distinguish informants, as they were demographically somewhat similar.

In content analysis, the data is analyzed and categorized in finding and then concluding similarities and differences. Common for content analysis is the text format, in this case the transcribed interviews. Content analysis aims to form a summarized description about the studied matter and to link it to the broader context and other studies, such as sustainable consumption and similar studies. (Tuomi & Sarajärvi 2002: 105.)

3.5. Quality of the study

The validity of the study refers to the research's capability of examining what it was supposed to study, whereas reliability is the consistency of the research results. These terms however are not most suitable for determining the trustworthiness of a qualitative

research, which is determined by four aspects; credibility, transferability, dependability and confirmability (Lincoln & Guba 1985).

Essential for the credibility of the study is how well the researcher is able to document and justify the made decisions on the how the research is conducted. Credibility is based on the evaluation of the whole research process, which also includes the quality of the data and its analysis. According to Anttila (2000: 408) the credibility is connected to the researcher's capability of building a setting for the research, in which's context the research question may be answered and the interpretations of the results and their transferability may be evaluated. Affecting credibility is also how the data was managed, so it is necessary to present all the steps in the analyze phase and the interpretation. (Kvale 1996: 235–236; Hirsjärvi & Hurme 2011: 189; Eskola & Suoranta 2008: 208.)

The purpose of transferability is to create a connection between one's own study and previous studies by linkages to the existing literature. Dependability shows whether the topic is familiar and whether the conclusions can be drawn from the data. It also tells whether the connections between observations categorizations are meaningful and if other researchers can end up with the same results. (Eriksson & Kovalainen 2008: 294.)

As a basis for qualitative interview is the subjectivity of the researcher and the researcher themselves being a research instrument. This is why the researcher is the primary target of evaluation concerning the credibility of the study and choices concerning research methods. Confirmability is about the answers and conclusions not being the produce of the research's imagination, and the findings and their linkage to the data has to be clear. (Eskola & Suoranta 2008: 210.)

The credibility can be seen the broader definition for evaluating the study. Triangulation however is comparing the results with information and results from other sources. (Hirsjärvi & Hurme 2001: 188–189.) Triangulation is said to increase the credibility of a study as the use of more methods and sources gives a broader view on the topic than looking at it from one perspective only. This has been the aim in this study as well, since there are previous studies on Finnish energy consumers, but from a similar project like Adjutantti.

The credibility of an interview is linked to the reliability of the answers and the overall quality of the interview (Kvale 1996: 236). For this study it was relevant to point

distinguish that the researcher is not member of the organizations involved and that the anonymity remains in every phase of the study. This was to keep the interview situation as natural as possible and that informants could share their opinions and thoughts as honestly as they wished.

4. SUSTAINABLE CONSUMPTION OF ADJUTANTTI RESIDENTS

This chapter represents the findings of the interviews and possible linkages to the literacy review. An important factor to be pointed out is that the residents of Adjuntantti can't be considered to most traditional Finnish energy consumers. Both Moisander (2007: 404) and Salonen and Åhlberg (2013: 48) discussed energy consumption and attempts to save energy through personal and contextual factors. In Adjuntatti, the solutions and housing techniques are aimed to maximize the ability to save energy and consume in a sustainable way. It will be interesting to find out, if energy saving is still challenging, even when living in Adjutantti and if so, why.

The results will be presented in a similar order to how they were discussed with informants, to see a clearer continuum. Despite the quick saturation of some themes, there was a large range of answers for most themes, which was the aim of keeping the interview semi-structured.

As background information the informants were asked why they had moved out from their previous homes and why they chose to purchase an apartment in Adjutantti. Most of the informants have moved to Adjuntantti from a larger townhouse or a detached house. The biggest reason was that there was no longer a need for a bigger home after kids have moved out. The second common reason that was mentioned by all the informants as well was the frustration of the snow that had to be ploughed during winters. There were more precise reasons as well like;

> *"We aimed for easy living and maintenance of the house. We got fed up with all the snow and gardening and things like these that living in a townhouse of a detached house bring along."* (Informant 4, M)

> *"Besides, this is a much better option for someone our aged, because it is easier to travel when this can be left empty, unlike a detached house. And I have to admit, all the ploughing… my condition is not as good anymore so I can't to it as much as before. So for health reasons this is also easier."* (Informant 6, M)

In addition to these fairly traditional reasons that are often explained with lifecycle, a few informants had more specified answers, which only shows how diverse the reasons for moving from their previous houses may be;

> *"Well actually the reason was that two or actually three years ago, when it looked like the euro was going to crash and I felt that the money has to be invested fast before something bad happens. That was the most important reason and in addition to that, the place where we used to live, well there came an Alepa and it got restless. So those were the two reasons but the crash of the euro being the most important."* (Informant 5, M)

> *"Well… umh, we wanted nicer neighbors*." (Informant 1, F)

As background information, the informants were also asked whether they had known about the energy efficient features and solutions during purchase. This was one of the questions that had the biggest variations. Some of the informants had been aware of the solutions right from the start. In their opinion, Adjutantti had clearly been marketed as energy efficient building, and they felt to some extent being a part of an experimental project.

> *"These energy saving solutions clearly had an effect on us moving to Adjuntantti, so this is kind on an experimental building and it was marketed quite a lot. And then there was the electric car and all these kinds of things that were fairly interesting. And then the solar panels on the roof were also one… so out of pure interest we decided to give it a try."* (Informant 7, M)

A few informants said they didn't know about the housing technique and solutions until the building was already being built, and after their purchase.

> *"We bought this house almost a year before it was completed, and we didn't know about these things. There were a lot of things that then came as a surprise at the point when they started building the house."* (Informant 4, M)

A few informants said that the solutions had a clear positive effect on the purchase decision, while others said it was the other assets of the apartment that made the difference. None of them however said that these features and solutions would have had a negative impact.

> *"Well maybe yes right in the end when we had left only these two apartments between which to choose from, but also the fireplace was very important."* (Informant 2, F)

> *"Yes it did have and impact and location was another."* (Informant 5, M)

All the informants were also asked whether they knew the main heating source of their previous house, and all the 7 informants knew what it had been. All except one of the informants (Informant 1, Female) had lived a townhouse or detached house either just before Adjuntantti or in the past few years. This suggests that Adjutantti residents have a better knowledge on how their houses are heated as opposed to the general figure of 32% of Finnish living in apartment building not being aware of that (MEE 2013: 25). However, possible lack of information may still be in other aspects of energy or areas of consumption.

4.1. Personal meanings for sustainable energy consumption

Before finding out whether the sustainable consumption had extended to other areas of consumption, the second objective of the study was to uncover through the interviews *what sustainable energy consumption and the attempts to save energy mean to Adjutantti's residents* and if it important to them. As expected from previous studies, even the term "energy" means different things to different individuals. Energy is something fairly abstract and often only enables the use or consumption of something else.

As can be seen from the interview guide (Appendix 1.) the questions were left abstract to get as spontaneous answers as possible and one of the questions that resulted in the biggest variation of answers. Two informants immediately mentioned the word electricity and appliances. Keeping the house warm was also something that was mentioned by all except one informant.

> *"If you think about it in a broad perspective, it is the enabler of modern form of life. So energy consumption and energy is consumed in different forms like living, transportation and even in free time. It is such a fundamental part of modern society."* (Informant 6, M)

> *”Well heating and electricity, why not even water…”* (Informant 2, F)

> *”…of course it is the electricity and heating, they are everything… And that it is nice and comfortable being home and those can be controlled to be how I want them to be.”* (Informant 5, M)

A few informants found the question too abstract at first, so it was specified by “how does your household consume energy?” This resulted in similar answers, as the original question and energy is clearly associated with something they felt was necessary to enable normal living conditions and to do everyday chores.

> *“Well at least electricity, so all the appliances like TV, digibox and then… Well there it was… And of well computer of course.”* (Informant 3, F)

As already suggested, the informants explained energy and its use mostly through their personal direct use, and left industries and the supply side out. For one of the informants, energy was about how much carbon dioxide emissions he produces in everyday living, and also a few others mentioned the environmental dimension right away.

> *“…so that’s what it brings to my mind, so oil and the preservation of oil and of course the polluting of the atmosphere all in all. Sure it is the personal bill that is the first reason and the second is the satisfaction that I don’t make as big of a mess I used to, in environmental means I mean… thinking how much I have used fuel and things like that.”* (Informant 7, M)

> *”Trying to consider energy consumption for only environmental reasons is a bit idealistic for me, it’s more the practical reasons. Of course it is on my mind that emissions would be smaller, but the use of the home-away switch is very practical. In case something was left on.”* (Informant 5, M)

Energy resources where commonly referred to as common goods that need to be preserved in literature. (Dolan 2002: 172.) Despite many informants mentioning about the need to preserve the resources, no one reasoned their attempts to save energy in more idealistic reasons, such as the importance of sharing this collective good equally amongst everyone. Most felt energy consumption was to some extent a necessity to live a normal life, and one of the residents argued this well;

> *”I don’t have a passion for trying to get the consumption as close to zero as possible. That I understand that energy gets consumed in modern life.” “And in a modern society there are ways to respond to these environmental strains caused by energy consumption, and I believe there will be new solutions for this in the long run. I haven’t taken personal pressure of this.”* (Informant 6, M)

To conclude, for these informants energy is everything from electricity to fuel and everything in between. It is seen as a crucial part in life and being able to live according to the standards of a modern life. Every informant highly valued the attempts to save energy and to use energy in considerable manner, which is in parallel with the study by Salonen and Åhlberg (2013: 52). However, the purposes behind these attempts varied slightly, as some informants pursued to save energy to preserve resources and others to leave a smaller mark on the environment. However, it was clear that when discussing decreasing consumption, the environmental dimension was strongly represented.

Also notable was the fact that at the beginning of the interviews, informants didn’t mention money or the electricity bills, suggesting it is not an important aspect when they are consuming energy. The more specific ways of consuming energy was addressed in the next theme of the interview.

4.2. Sustainable energy consumption and reasons for it

Despite there being several solutions for facilitating and encouraging for the simplest energy saving routines in Adjutantti, it was still important not to jump into conclusions on how the residents consume energy and to assume them taking actions to save energy. At this stage it also remained unclear whether the residents face similar challenges in energy consumption as normal households do, but these were revealed as the conversation moved on to more detailed areas in consumption.

To be able to answer the third objective of the study; *whether the sustainable consumption of Adjutantti’s residents has extended to other areas of consumption*, all the three areas of private energy consumption were discussed; housing, food, transportation but also waste sorting. These were identified as the main areas of household energy consumption and also areas which Finnish consumers give attention to (Peattie & Collins 2009; Klein 2013; Salonen & Åhlberg 2013). The aim was to

reveal possible new areas or ways of consumption within these broader groups. First discussed were energy consumption in the household, more specifically heating, electricity and water. A notable factor is that many informants though of water being a separate part, despite it being common that radiators for example have water running in them.

It was interesting to see that the most typical targets of campaigning such as energy-saving bulbs, turning lights of and reducing stand-by energy (Jensen 2008: 353,358) were also the most common ones mentioned when asked about ways to save energy.

4.2.1. Heating

Without a doubt, the use of energy for heating in particular is smaller in Adjutantti than in similar apartments. This is because of the good insulation and recovery of heat in ventilation. Informants mentioned in several occasions that there had been no need to turn on radiators even during cold temperatures.

Despite not having any secondary data and exact figures on how much has been spent on heating in each household, only a few days before starting the interviews, the first informants had received a bill of their district heating. All the residents had paid for their district heating in advance over a year ago, and this original sum had been estimated using data from similar sized, "normal" apartments. This became an interesting part in the interviews and helped ask further questions about individual consumptions. It was also something many residents had been thinking about. The possibly outcomes of this received bill were returns or additional payment if the use of district heating had exceeded the original estimation. The original estimation for an 88,5m^2 apartment had been around 159 euros. However, by the time all the interviews had been conducted, it became clear that there were major differences between apartments in Adjutantti.

> *"…but yes it is surely the recovery of heat in ventilation that has impacted the district heating, since in the last one and a half year we have paid 37 euros of it so we don't pay almost anything of heating."* (Informant 2, F)

> *"Yes, and we did in fact pay… We have paid of all these estimated bills an additional sum during these two years. And this district heat bill I found a bit peculiar."* (Informant 1, F)

Despite heating being a big area for energy consumption, many felt that heating no longer causes stress as it used to. This because many used to have their heating somehow connected to electricity, and cold winters were something very unwished in a large detached house. In an apartment the control of the heat and possible loss was obviously easier.

> *"And the best part is the unsurprising and foreseeable amount of consumed energy. When a few years back there were some really cold winters and we had to heat the house partly with electricity, it was always unpredictable. In the autumn you had a slight fear of what the winter will be like, and here there is no such worry and I can concentrate on other things and not budget heating separately".* (Informant 6, M)

However, heating the apartment that usually results as room temperature, is seen something that may separate energy users from another, as it is something very individual and how it is used is based on the needs and wants of an individual. (Gram-Hanssen 2008.)

> *"At least I can't decrease the room temperature to 19 Celsius for example, since my feet are so sensitive. Even in 21 degrees I have to wear woolen socks."* (Informant 4, M)

Because some find the need to feel comfortable via room temperature, there were also differences how the room temperature was set. Residents seldom need to turn the radiators on as the room temperature stays easily in the suggested 19-21 Celsius, but some aimed to keep the room temperature lower save in the district heating bill.

> *"I don't know if you can feel it, but we've kept this a bit cooler on purpose..."* (Informant 5, M)

Despite the differences in preferences concerning room temperature, all the informants followed their apartments' room temperatures. Everyone was very aware that the small

changes may result in big differences in the bills, and the room temperatures were monitored and controlled through an indoor thermometer and lowered when possible.

> *”And then concerning the heating, well we got a big bill from that as well so I did some adjustments in the rooms. We had the room temperature se to 22 Celcius so I now decreased it to 21.”* (Informant 1, F)

All this information is slightly contradictory to what Jensen (2008: 357) suggested in a previous study, claiming that meters do not have a direct impact on energy consumption patterns. In the case of heating in Adjutantti, it certainly had made a difference and the accurate and easy monitoring had increased the motivation of detailed following for many.

An interesting point that occurred when conducting the interviews was that there was a connection between the ones owning a summer cottage and travelling a lot to getting returns on the district heating, whilst a few “living fulltime” in Adjutantti had actually had to pay extra. So in order to reveal why there are such big differences in consumption, it seems that the everyday lives would have to be followed for a longer period of time, since none of the households who did pay extra seemed to be spenders or careless in using heating.

4.2.2. Electricity

As stated earlier, electricity receives most of the attention concerning energy and savings attempts, despite many appliances and light bulbs being very energy efficient already.

The popularity of careful monitoring of electricity is nothing new, as it has been easier to follow for most than water and heating. However compared to times before living Adjuntatti, for most the electricity bill does not impact everyday living anymore as it is not a source for heating. Electricity and detailed ways of monitoring where discussed with every informant and it is something that is paid highly attention to.

> *“I check the monitor roughly on a daily basis, but the electricity bill is so small that it has no effect on this.”* (Informant 5, M)

> *"...and then I follow from the monitor. And of course the thermostats in each room, those I also check every now and then."* (Informant 4, M)

> *"We check the average electricity consumption from the monitor."* (Informant 2, F)

The "Home-Away-Long away" switch is designed for everyday use, and targets the stand-by consumption of appliances and electronics. There were big differences in how frequently the switch was used, and many felt it was not necessary for daily use. The possible withhold from using was often explained with something else than laziness for instance.

> *"Yes we use it. Every morning when we leave to work I switch it to "Away", and well of course it doesn't have time to decrease the temperature that much during the day, but when we come back we switch it on. I also set it "Away" so that it turns off the electricity from the certain plugs which makes leaving more carefree."* (Informant 4, M)

> *"Sure this home-away switch is good even as a practical solution, and it already a routine to switch it whenever I leave the house."* (Informant 5, M)

> *"No, we don't use it that much. We often have someone at home and it is rare that we would all be gone. But probably if we went travelling…"* (Informant 1, F)

As in heating, there were also great differences in the use of electricity, despite everyone monitoring their use. The detailed monitoring from the room monitor or the online had increased the willingness to save in electricity for some, but many said that they had already been precise in monitoring before Adjutantti, so they couldn't say for the interest having increased.

> *"Well I don't know… I've always monitored it."* (Informant 5, M)

> *"I don't think I burn less electricity than before, but now I know better in which things I could save in and I wonder why there isn't more of these."* (Informant 2, F)

Some household appliances require ongoing electricity, no matter how often it is used, like the fridge. However the electricity consumption of several appliances is related to the frequency in use, such as dishwasher, lights and television and the needs versus wants are also weighted in these areas well. Lighting was something in which there were differences even within households, as it was more important for some.

> *"I constantly turn on the lights and he walks after me and turns them off. I can't be in the dark, I need a lot light, perhaps it's a personality thing."* (Informant 2, F)

> *"Well we use for so many things! Baking… then we cook, the lights are on."* (Informant 1, F)

Only the female informants mentioned cooking in their answers, so it did not receive as much attention as maybe expected, since it is still something that differentiates energy consumers from each other, despite the appliances for cooking taking a smaller share of electricity consumption than 20 years ago (see Figure 7.).

Hygiene related electricity use is something that can't be decreased to zero, but the personal preferences in this area as well seem to make a very big difference in the electricity bill for instance. Without exception, the households who frequently used the sauna and washing machine, were the ones with a higher electricity bill in Adjutantti as well.

> *"And we do go the sauna twice a week, which consumes a lot."* (Informant 5, M)

Despite people mentioning television in the appliances when initially talking about household energy in general, later when discussing appliances and electricity use in general, the television didn't receive much of attention. The decreasing use of television is also a Finnish trend (MEE 2013) and the electricity use was concentrated more on the ICT technology, which was also the case in Adjutantti.

> *"The television is not usually on during the day but now is an exception that there are the Olympics… but the computers are, both the laptop and desk one."* (Informant 5, M)

When it comes to differences between households, other than how appliances are used, there was big variation in how the electricity consumption is being monitored. Only two informants were active users of the online portal, whilst others checked their monitor.

> *"Either from the monitor or online, which I use more because it provides even more information. That is nice in the sense that it can be transferred to the spreadsheet, and I am constantly aware of how much is consumed."* (Informant 6, M)

> *"No I haven't used it. I don't usually bother go to the computer after I get home from work, so it's the monitor from which I follow."* (Informant 4, M)

The electricity bill was something everyone checked and more of less tried to compare to the previous one of the previous time from last year. One informant said to follow the used the amount of kW, whilst all other were focused on the figure in euros. Another interesting observation was that almost every informant pondered whether the electricity bill comes once every two or once every three months.

Despite the informants having very much knowledge on electricity use and the size of their electricity bills, the source of the electricity they consume was left for less notice. Some of the informants had done comparison between electricity companies, whilst some informants assumed they were as a condominium tied to a deal with Fortum.

> *"No we haven't compared, because it's the same for the whole condominium."* (Informant 2, F)

> *"I buy the electricity from Vantaan Energia, from which I also get S-bonuses."* (Informant 6, M)

Because of the fact that informants live in an apartment building, it was assumed that one challenge in particular, aesthetics of possible energy efficient solutions (Gram-Hanssen et al. 2007: 2886), proposed by would not occur in this study. However, this did come up when discussing about a summer cottage and possible solar panels with one of the informants.

> *"Well it is a 100-year-old villa with architectural value and it would spoil the appearance."* (Informant 6, M)

In addition to the solution already provided in the apartment, it was interesting to hear that some had made small extra efforts to save energy or even to produce it.

> *"We have the television, digital player and DVD on an extra extension cord which we turn off every night."* (Informant 3, F)

> *"I bought a briefcase like 8 or 10 years ago, that opens up and has a solar panel in it. It's pretty small, just a normal briefcase. I have a small outboard motor in my rowing boat, which is not that fancy and lake is no more than 3km, so I manage well with that when I go fishing. So I've had this electric motor for years and it's only a one day's job to charge it by solar. So it's free of charge, but we haven't installed any solar panels because the cottage is not positioned correctly (compass points) and we should have put them somewhere else. We also put small leds here in the kitchen despite the fluorescent lamp being fairly efficient, but we don't like the light of it, so we set these leds."* (Informant 7, M)

The answers received from informants show that the people emphasize on very different appliances and practices when talking about electricity. As expected, lighting received attention, despite it not being a bigger are of electricity consumption than freezers and the stove and dishwasher. The dishwasher was disregarded and only two informants mentioned it in any discussion. The general trend of decreased use of television (MEE 2013) was something apparent in Adjutantti as well, and the informants mainly talked about computers.

The general knowledge on how the household consumes electricity was good, however how that electricity is produced didn't seem that important. Also there may be a risk for the motivation of monitoring to decrease, if the bills are so small.

4.2.3. Water

Water was an area of consumption which was paid attention to and in which nearly all informants knew how they could be consuming in a more considerable manner. These findings are also in parallel with the ones of Salonen and Åhlberg (2013: 52) who suggested that water is one of the easiest areas in which to decrease consumption in.

Highly appreciated was also the fact that they were now paying according to actual consumption, unlike the common way of paying an estimated figure.

> *”It was important that we pay for our own consumption and I do spend it fairly much. So we definitely pay for every drop and that is something in which we could easily save, if we just closed some taps.”* (Informant 2, F)

> *“Yes and in many apartments they pay a fixed price for the water, so there it would have no effect even if the consumption changes.”* (Informant 3, F)

These comments are also contradictory to the suggestion that meters do not have such a strong impact on motivation as may be assumed (Jensen 2008: 357). Water is also something that is in modern urban living practically impossible to decrease close to zero consumption. Water is a basic need in the form of hygiene, and consumption increases as the amount of members in household increases. However, the consumption of water in amount and frequency is to some extent individual as well, to how often and how much each time the water is used.

Water was not as popular in careful monitoring as electricity was, but many informants felt that is was without a doubt an area in which they knew how they could save and they had started to monitor it to some extent after moving to Adjutantti. Only one admitted being quite a careless user, leaving taps running every now and then, but the rest seemed to take conscious actions in closing the tabs and so. In addition to short showers, these are the most common actions for saving water in general as well (Jensen 2008: 358). Some of the informants even mentioned having changed their routines after moving to Adjutantti.

> *”So because of the huge bills we got this manual egg timer and you can be in the shower for as long as the time is set to be, and that will have to be enough.”* (Informant 1, F)

> *”After moving to Adjutantti, at first I took showers like before, at least once a day. But when I started seeing the amount of water that I was consuming, I now take a shower maybe every other day. And now we got some returns on our water bills, when the last year we had to pay extra. So our water consumption is definitely more reasonable now.”* (Informant 3, F)

Some informants mentioned that despite their aims to save water, they did not believe that the water resources in Finland are in danger.

> *"I wouldn't say water is relevant in the consumption, since it doesn't seem to turn into a problem in Finland."* (Informant 5, M)

It was evident that despite water being an important part of the energy consumption, the ways it was used and how it was controlled wasn't discussed through environmental dimensions as much as electricity for instance. This does not suggest that water wouldn't be seen something not worthy preserving, but paying for exact individual consumption was emphasized the most.

4.3. Other areas of sustainable consumption

The biggest areas for private energy consumption were housing, food and travel (Peattie & Collins 2009: 110). But because (Klein 2013) suggested that waste disposal is a crucial pillar and something Finnish highly value (Salonen & Åhlberg 2013), sorting was addressed as well. Now that the results concerning energy consumption related to housing have been presented, it is possible to tackle the other areas of consumption when aiming to answer to the third objective of the study; *whether the sustainable consumption of Adjutantti's residents has extended to other areas of consumption*.

As mentioned earlier, many believe that environmental awareness is buying labelled products, and they fail to consider that what if they just held themselves from using or purchasing something at all (Gram-Hanssen et al. 2007: 2885). It has also been a common belief that sustainable consuming is expensive (organic) but the information acquired do not fully support all the challenges mentioned in the literacy review.

4.3.1. Food

Favoring organic food was also seen as a part of sustainable consumption in the literacy review (Peattie & Collins 2009: 110.) The consumption of food has been broadly studied, and the most common reasons from not purchasing organic food are its relevantly high cost and sometimes availability.

When asked to what factors the informants pay attention to when doing grocery shopping, three of them immediately mentioned the decreased meat consumption. This was followed by the explanation related to health.

> *”Well quality… We also try to by organic when it is decently priced and domestic. And our meet consumption has decreased quite a lot, even though we haven’t even tried to…”* (Informant 5, M)

> *“Our household has definitely decreased eating meat and we eat more chicken and fish. But it is also for the health reasons, the low fat.”* (Informant 7, M)

As discussion moved onwards, it became obvious that none of the informants base their food purchases solely on price. The manner in which price was discussed was not that these informants would necessary need to buy the least expensive option, but there was a sense of slight resistance towards the overall price level in Finland.

> *”Well now after Spain, price definitely. The difference is unbelievable. There you can make it out of the shop with one third of the money when you fill your bags like usual.”* (Informant 7, M)

> *”But then daily produce like milk and those that are always needed we take the cheaper and try to find alternatives.”* (Informant 3, F)

The word “organic” was mentioned by nearly all the informants and at least some groceries were always the organic option. The reasons why they favored organic food were also different.

> *”...we usually choose the organic option and from those we still check the country of origin. Because even if it was organic, it depends on the country of origin whether we buy it. We try to stick with domestic products and that as little as possible use of pesticides. We are the generation that remembers the use of the pesticides in the 1950s and those were poison that could never be accepted today.”* (Informant 4, M)

> *”We try to by organic when it is reasonable price and domestic.”*(Informant 5, M)

Because it was not in the objectives of this study, it was not suitable to try and establish the differences in meanings in "country of origin" and "organic". It was obvious that for some a Finnish produce was almost automatically more organic than a foreign grocery, and these terms were sometimes mixed in the conversations. The consumers however were realistic on that labels and county of origin may be misleading. Only one of the informants mentioned occasionally buying food directly from the producer.

Because of the difficulty of tracking down were the food actually travels before it is consumed by the end user, informants mentioned it was difficult to try and estimate the sustainability dimensions of the food. However, a few informants mentioned that they have made a conscious decision to keep trips to the supermarket on a once a week basis, to avoid extra car use for this purpose.

> *"We go to the shop as seldom as possible. We make an effort in buying the food and milk for at least four days at a time. So that is something we have paid attention to."* (Informant 3, F)

Food was one of the areas that had the chance of revealing new sub areas in it, but as discussion went further, it came obvious that despite the informants making sustainable decisions, they had been doing so already for a long time. None of them said that the motivation for buying organic food would have somehow increased after the move to Adjuntatti.

4.3.2. Public transportation

Kennedy et al. argued (2013: 359) that living in an urban environment is a more sustainable way of living than in the urban area. Adjutantti is in a very central location when it comes to public transportation, and every informant mentioned the decreased use of private transportation. Location was had been a crucial factor when doing the original purchase decision, and two households had been able to give up on their other car.

> *"But the energy used for transportation has decreased in the sense that when we lived in the detached house, we had two cars. And we moved here we felt*

> *that the other one was unnecessary and even the one we had is in very little use now."* (Informant 6, M)

One household was obligated through work to use two cars, but had decreased the kilometers to a marginal amount compared to time before Adjutantti, despite the informant being unable to use public transportation for commuting.

In some case the choice of public transportation was strongly related to the convenience and the cost of owning another car. Many referred it to significantly easier to take the bus or train to the city center, than driving your own car and paying an expensive parking fee.

> *"Yes it was something we thought about when moving, because I go to work in the city center and there is no point going there by car. So it affected the purchase decision that the other could use the public transportation."* (Informant 3, F)

> *"My wife works in the city center so the connections were very important."* (Informant 5, M)

Transportation as could be expected receives economic and environmental aspects and the chance for public transportation had been a big decision maker when moving to Adjutantti.

4.3.3. Waste sorting

The residents in Adjutantti were no exception for what Salonen and Åhlberg (2013) had already presented in an earlier study. Sorting the waste was highly appreciated by the residents and all of the residents had engaged themselves into proper waste disposal.

> *"Yeh, that is really nice here. There are good possibilities to sort and of course we want to utilize them. We have four different bins in our kitchen and for me this sorting is important and useful. And the reuse of the waste is something I am ready to see an extra effort in. And here it is well thought through and easy."* (Informant 6, M)

> *"Yes, that is actually a new thing for us because earlier we didn't have compost even though we would have wanted one. So we used to sort only newspapers, but I've learnt this system of sorting all of these into different bins very quickly."* (Informant 2, F)

Waste sorting in Adjutantti was mentioned to be easy and the amount of bins was appreciated. All of them said that waste disposal is something they consider really much and want to make an effort in. Everyone was also willing to make and extra effort to take hazardous waste to separate disposal sites.

> *"Previously we took the papers and glass for instance to Sello, because there is a sorting site. So the same we can now sort here."* (Informant 6, M)

When discussing the topic further, all of them had in some means been sorting their waste already before Adjutantti. A few informants said their possibility to sort waste used to be more complicated due to the lack of bins in their yard, meaning the contextual factors (presented in Figure 5.) now enabled for a more precise sorting, which has probably been the aim in the start.

When the problem of sorting waste more precisely used to be the amount of bins outside the house, a current problem for some was now the lack of space indoors. Many said they would be willing to sort even better, but don't have more space in their kitchen.

> *"Yes! The difficulty is actually here in the apartment, because we have no more space. It is not that complicated but we have no room the cupboards."* (Informant 7, M)

Informants in general had a very good knowledge about waste sorting and were ready to make an extra effort for it; however as most informants went through all the different bins they have, the answers were not always identical.

4.4. New areas of sustainable consumption or just new routines?

The third objective of the study, *whether the sustainable consumption of Adjutantti's residents has extended to other areas of consumption* proved to be more difficult to

tackle than expected. As the interviews proceeded, it became very clear that the informants are making conscious decisions in energy consumption related to housing, but also food, public transportation and waste sorting. The informants were also very active in using the solutions provided to them.

As the better contextual factors now enable the engaging into new routines and ways in consuming in living conditions, it seemed likely that the residents are more sustainable consumers in many areas of consumption than what they were before moving to Adjutantti. However, further questions revealed, that most of them had been seeking solutions for sorting and public transportation already earlier. So have the residents extended their sustainable consumption into new areas of consumptions, or just refined and taken routines and habits they used to have one step further? Several informants said to consider themselves as more sustainable consumers than before, but the answers were supported by referring to energy. Of this as good example the decreased use of sauna, egg timer for shower and decreased frequency of showering.

Evidently, many of the informants put a personal effort in benefitting from the solutions, but only a few admitted something being new to them. The only new things were related to sorting the waste and public transportation, as the tendency of buying organic food had been something the informants had been done for a long time.

Without leading the informants, it was clear that despite the broad knowledge of the environmental consequences, all areas of consumption were also affected by personal needs. Some habits and behavior were also explained by being “old school”. This is also something that has been recognized in previous studies (Gram-Hanssen et al. 2007:2884–2886) and people often referred to past times and how the consumption habits were learn already young. Some also suggested the way they consume energy is related to their personality, and they find it difficult not to use something.

Three informants had a summer cottage. For some the summer cottage was now the actual house, and the apartment in Adjutantti was a second house. Many of them were now more concerned of the energy related factors there, as now they could clearly compare the energy consumptions between these two places. The heating varied very much between these summer cottage owners, as for some it was only meant for summer use and for some to be all year round. Everyone expect the ones heating it up with wood had been considering modern options for heating such as fireplace that recirculates air.

A slightly peculiar topic brought up by several informants was the room temperature. There seems to be some controversies in saying how sustainable even the Adjutantti as a building is. Because of the good insulation, the apartments may get really warm during the summer. This has resulted as the need for a few to buy an extra fan for summertime, which takes up electricity. Of course this is an easy answer compared to a built in cooling system, but is there a building technique that could adapt to the large temperature differences in Finland?

Already in the beginning the term "sustainable consumption" was defined difficult, as 'consume' is something to use it up or to destroy and 'sustaining' something is the complete opposite (Peattie & Collins 2009: 107–108). An interesting thing that occurred in the study was that when discussing why they are *saving* energy, the informants talked about the environment and resources. But when asked why they *monitor* their consumption, the reasons shifted to the euros in the bills, when one could assume that the reasons behind both would be similar.

As mentioned before, the answers started to saturate already at an early stage. It became relevant that even though many of them followed their consumptions to some extent, the current bills of their energy usages were so small, that they had no significance to their everyday life. The informants had a great attitude, and none of them talked as if their share would now be done, and problems are for the rest of the consumers to carry from now on.

Despite the grouping of informants not being an objective of this study, it was interesting to see whether the informants show characteristics of the grouping of sustainable consumers; Translators, Exceptors and Selectors (McDonald et al. 2012). The Selectors (focus on one area of sustainable consumption and leave other areas as grey and for less attention) were said to be the largest group in number, but the description does not match the information on what has been learned about Adjutantti residents. The residents are closest to being Translators, as they are open for change and aim to act the way they perceive being the right thing to do. However, these informants were not motivated by a political agenda. But Exceptors who aim to achieve the smallest environmental impact by thinking what they eat and where they live does not match the description as these informants also fulfilled personal needs.

Many informants as said mentioned new routines and through discussion their personal motivation for sustainability became very obvious. However, now that they were

provided with these energy efficient solutions and the bills were smaller, the interest towards some activities (like monitoring) had decreased.

> *"In the beginning I looked at them more frequently but not so much anymore."* (Informant 7, M)

The valuation of sustainable consumption however had not decreased, and it seems like for these informants, the motivation was not solely tied in economic reasons, as they still aimed to what they perceived right, despite the stress from the money being spent decreased. Also something to consider is whether the real life Exceptors, who aim to build they lives around the philosophy of leaving as little behind as they can would live in a new, somewhat expensive apartment in the city, without the possibility of having livestock, producing your own food and collecting rain water for instance.

4.5. Reflecting on sustainable energy consumption

Based on the interviews and results, it is obvious that these residents have a lot of information on energy related issues. Many of them considered their energy consumption a lot, and can be said to be more sustainable consumers in household energy consumption than Finnish on average.

As mentioned, the economic and environmental aspects were something that were greatly considered, but the social dimension was left for less notice, and was only present in comparing the bills with neighbors and telling others about their solutions. However, it was interesting to see that the few "improvements" some informants would have made in the building, had a social dimension to them.

> *"We don't use the sauna in the apartment that much. If we do go the sauna, it's at our summer cottage. I would much more prefer us to have a shared sauna, rather than have square meters from the apartments chopped in to individual saunas. So if we had a shared sauna, with own shifts, I would probably use it very much."* (Informant 6, M)

> *"For sure we could use a laundry room but there isn't one in the building."* (Informant 4, M)

> *”We would have thought there to be a laundry room… there is a room for drying the laundry, but it’s quite small. But you could have thought that the laundry room is something that would have focused on. We use to have a really good laundry room in our previous house and we used it once a week and took all the laundry of the week at once. Then we dried them right after.”* (Informant 5, M)

So the actual problem doesn’t seem to be the collective use of something, but the resistance of not paying for more than the personal use. This argument is also supported by the discussing related to the electric car. The original aim was to leave the electric car for minor attention, but many of the informants brought it up without asking. However, the electric car received notice already when asked about why informants had moved to Adjutantti.

> *“Yes, the electric car was quite a plus, but I didn’t even use it, only tried it once. My husband however did use and car was promoted quite a lot and it was very interesting then.”* (Informant 2, F)

> *”And it would have been great to have three electric cars there in a row, but the time will come!”* (Informant 7, M)

According to several informants, the electric car had originally been one of the most interesting solutions Adjutantti had to offer. Yet none of the 7 households being interviewed had been an active user and the use ranged from 0 to 4 times. The reasons were that reserving the car for a specific time was more complicating than just taking your own. All of the households in question had a car of their own, a few had even had two, but had given up the other one. Everyone agreed that the car had been too expensive for the condominium to pay, when it was a marginal group using it actively.

> *”But I’m pretty sure that once I buy my next car, it could easily be an electric car. But this kind of common use is a bit problematic, but if there would have been a good reserving system or it would not have been so expensive…Only the ones using it should be paying for it.”* (Informant 2, F)

> *”No no no… I had a test drive and I was about to use it, but the problem with it was the huge own risk in case of an accident. If you borrowed it and had an accident it would have cost me over 1000 euros, where as it is 150 euros with*

> *my own car. So I think that sum was too big and the group using it was very marginal."* (Informant 5, M)

It was surprising that only one of the residents mentioned that the original problem with car had been the big own risk that had to be paid if something had happened to car. The amount was over 1000 euros compared to the 150 euros this informant had with his own car. So in case of an accident or bump, it was cheaper to be driving your own car.

The residents were surprised how the car had been taken away, with no room for negotiating or planning the usage again. Two of the residents said they would have been happy to see three electric cars in the parking hall (one per building). Two others also said they would like to have an electric as a second car, but said that it is not suitable for long distance trips in Finland yet. So the electric car is something that could be taken back to consideration at some point.

A positive surprise was also the fact that the informants had been quite fascinated about being a part of an experiment. The informants clearly showed that they were ready to try a more energy efficient way of living and the trust factor was not questioned. The question of how much they could have been willing to pay more of these remains unclear, because the solutions were provided automatically and only one informant felt the apartment had been slightly more expensive than similar apartments. But because a few mentioned the interest of being part in an "experimental" project, they would have hoped for the builder and firms involved to take a more active role in developing the solutions even further. Many informants said they would be willing to answer questions and tell about their experiences so far, but felt that other parties had lost interest.

> *"We have our own website for the condominium, which is a channel for communicating to the residents. It works all right, but in my opinion Skanska could be part of it too and share information with us to make it interactive. They could also ask for residents' opinions and experiences there. But so far they have been absent."* (Informant 6, M)

The informants also highly hoped that regulations developed into the direction that more buildings like Adjutantti would be built and were very optimistic about the future of these type of buildings. This suggests that the contextual factors need to be addressed, as there seems to be only little personal factors effecting sustainable energy consumption in a negative way.

> *”Hopefully this kind of living is more quotidian in near future. I don’t whether it’s the technique that is so unfamiliar or why there hasn’t been more of these type of projects.”* (Informant 2, F)

Despite the positive attitudes of the informants, it will be interesting to see what Adjutantti is like after 10 years’ time. Will the already existing platform been developed further or are there new solutions? And when the time for renewing some solutions (such as the solar panels in less than 10 years’ time) comes, will they be willing to possibly pay some extra. It might be that the financial challenges don’t occur until later, when the residents have to make the decision themselves.

A noticed factors was that there didn’t seem to be a great difference in answers depending on whether the informant was male or female. The discussion was around similar topics, and neither gender seemed to be lazier in some area of consumption than the other. The only difference between the genders was that the male informants mentioned cars already quite early in the discussion, whilst the female informants mentioned cooking as an area in which their household consumes energy in.

Still to pinpoint from the findings was that the challenges related to sustainable energy consumption were not as visible as they were on previous studies that concerned “normal” energy consumers. In the context of household energy consumers, none of the informants mentioned about there being any informational challenges apart from not knowing how much the solar panels produce surplus in euros. This was also a matter in which they had received information during the few weeks in which the interviews are done. Informants felt they had the knowledge to fully benefit from the solutions and to find information for other areas of consumption from somewhere else. There were a few traces of lack of information concerning how the energy they consume is produced, or how often they receive bills, but the lack of information was not used as an excuse when telling how they consume or try to save energy.

Informants also felt there were no financial challenges in being a sustainable energy consumer, but small bills are something a few of them aim to, and a few did not always choose the organic options because of the price. Political challenges were also left unmentioned, but if thought in a broad way, the regulation and lack of incentives does impact the purchase decision of an electric car, which a few informants were very interested of.

Lifestyle related challenges were something that something these informants faced, as they did justify some actions as something they want, not what they need. This was the case with lighting and showers, which however had been under critical thinking after moving to Adjutantti. To be critical, the use of car from a location like Adjutantti is always to some extent a lifestyle related question, as the connections are so good. It is just a matter of convenience and the willingness to spend extra time taking public transportation.

Social challenges were something that couldn't be found in Adjutantti. Despite the social dimension being present, it is necessary to underline that the habits informants said to have learned already in childhood were very good routines in the sense of sustainable energy consumption. The fact that some informants had discussed their bills with their neighbors and told guests about their solutions only seemed to have had a positive impact on the interest towards their own consumption.

5. DISCUSSION

The discussion around sustainability may be looked from several different perspectives and dimensions, but as noted, it is not always necessary to take them all into consideration. Looking back, it seems like having been the right decision in this particular study to leave two of the dimension out. The identified challenges proved valid, and a positive surprise was that the residents in Adjutantti do not experience the same amount of challenges in sustainable energy consumption as consumers living in normal apartments do.

Adjutantti represents a contemporary way of building and solutions that benefit both the residents and the environment. The solar panels and elevator produce energy, which is why Adjutantti still remains in the A class in energy efficiency, despite recent tightened restrictions. The solutions in the apartments enable accurate monitoring and provide information on current household energy consumption. The residents have the ability to react to their consumption immediately.

Because of the concept of Adjutantti being still quite new in Finland, research on this type of living and on this type of Finnish consumers has not been studied before. These residents form a very specific group of energy consumers, as they have a better ability than most energy consumers because of the contextual factors provided to them. However, so far only a few questionnaires have been sent out for the residents for asking about their experiences. The knowledge and eagerness to develop their building has left unnoticed, and the chance to learn from a project like this and a specific segment has been ignored.

Based on collected data, despite many of the informants saying they did not specifically look for an energy efficient apartment, it seems like it did attract consumers who were already to some extent sustainable consumers before moving there. Also the once for whom the building technique and solutions came as a surprise, said it had a positive effect and also showed changes in their routines; decreased consumption of water or sauna for instance.

The monitoring and exact figures seem to have been in the key role in motivating for the change in behavior and introducing new routines. The ability to have clear figures and to pay for only personal use were now highly appreciated. The ability to monitor is

something that has been addressed and recent regulation aim to provide a better chance for at least electricity monitoring for other private energy consumers as well. If the regulations are shifting towards the trend of more accurate information on consumption, maybe this type of regulation could be even more strict on new buildings in all the energy related areas; heating, electricity and water. If a monitor in the apartment or the chance to see all these areas in an online portal would result even in reducing the usage of sauna to once a week in many households, all together it would be a major decrease in energy consumption.

Additionally, it seems like solutions like these may need some time to develop and mature in the minds of the consumers. The electric car was something that many informants would have liked to use and were still discussing about, even though it had been taken away over a year ago and no one of these informants was an active user. The only obstacle seemed to have been the difficulty in reserving it, and the fact that it would have been a cost for everyone. But the provider had done no effort in trying to provide a solution for how the reservation system could be improved or how the pricing system could have been more reasonable. The car was taken away with no further negotiations. Perhaps the electric car could be reintroduced some time, with a better reservation system with limitations for use or a small amount to be paid when used.

For the future it could also be important in similar buildings to think about common saunas and laundry rooms, as they would significantly decrease pointless energy use, as they need a little extra effort before consuming. A notable thing is that all of the residents had purchased and owned the apartments, which is why they may be a bit more critical in what they want to have in the apartment. But the lack of a few similar solutions in bigger scale of for example rental houses is not justified. In a new student dormitory building the solar panels on the roof, good insulations and the similar ventilation system with heat recovery could be done. In these types of buildings, the builders wouldn’t have to worry about whether or not they will be able to sell the apartments despite a common laundry room and a lack of sauna.

The fact that the solar panels in Adjutantti produce enough energy for the common areas suggests that the same amount of solar panels would be enough for bigger buildings as well. Despite the payback time being hard to estimate, these solar panels are something that could be installed on the roofs of public buildings; offices and medical centers as additional sources of energy.

The residents were also aware about the fact that this was one the first of its kind, but were willing to take a risk despite knowing the difficulties with the techniques could occur. Especially now after many all the positive feedback from the informants, it is very surprising that the two buildings next to Adjutantti will not have these solutions.

This group of informants was a very specific group of consumers, and if what they told about their consumption habits is true, they were not the typical Finnish energy consumers even before Adjutantti. However, it proves that people already consuming in s sustainable way are still open for new ideas and routines in order to consume in a more sustainable way. They do not stop searching for alternative ways to consume or get rid of waste and they are definitely not thinking about their share for the mutual good being done, despite them living in an energy efficient building.

Despite all apartment sizes, both genders being represented and the age differences between informants, the number of households being presented was fairly small which creates restrictions on how much the information can be generalized. We are talking about a very small group of consumers with a better ability to consume in a sustainable way. The financial challenge is also more likely to be emphasized, if the number of informants would have been bigger and the interviews would have been conducted elsewhere.

Also, because of the informants personal volunteering, it may be that the person most concerned about energy related issues was not the one being interviewed due to time constrains. It was important to have both male and female informants, but due to time limit, a more deepen analysis on the differences between male and female informants were not analyzed.

Due to time constrains, all the areas where not addressed in the detail they would have needed to. The area of free time was only scratched in the theme of transportation, but the transportation mainly concentrated on every day usage and public transportations. Despite many mentioning that they do not travel due to work very often, it can't be said for sure that someone wouldn't be a motorcycle enthusiast or a frequent leisure traveler.

This type of projects would also need longitudinal observation, as routines change ad people may lose interest. There were a few suggestions that some of the informants were not as interest in the monitoring as they used to be, but it had not decreased the effort to save energy. To be more accurate in the interviews, it would have been good

to have quantitative data on how much these specific informants consume energy and if what they are telling matches the figures. Because it is possible to attain this type of data from an appliance level as well, it would have been interesting to go through the household consumption after first uncovering how the informants see themselves as energy consumers and do they believe they are consuming in a more sustainable manner than their neighbors.

REFERENCES

Alberini, Anna, Silvia Banfi & Celine Ramseier (2013). Energy Efficiency Investments in the Home: Swiss Homeowners and Expectations about Future Energy Prices. *The Energy Journal*. 34:1, 49–86.

Alvesson, Mats (2011). *Interpreting interviews*. London: SAGE Publications Ltd. 162p. ISBN 978-0-85702-257-8.

Anttila, Pirkko (2000). *Tutkimisen taito ja tiedonhankinta.* 488p. Helsinki: Akatiimi.

Autio, Isto (2007). Energiatehokkuusluku lasketaan ja mitataan. *Sähköala.fi*. [published 15.9.2007] [cited 13.2.2014]. Available from Internet: <URL: http://www.sahkoala.fi/ajankohtaista/artikkeleita/energiatehokkuus/fi_FI/energiatehokkuusluku>

Belk, Russel W., Güliz ger & Soren Askegaard (2003). The Fire of Desire: A Multisited Inquiry into Consumer Passion. *Journal of Consumer Research*. 30, 326–349.

Casimir, Gerda & Chris Dutilh (2003). Sustainability: a gender studies perspective. *International Journal of Consumer Studies*. 27:4, 316–325.

Cherrier, Hélène, Mathilde Szuba & Nil Özcaglar-Toulouse (2012). Barriers to downward carbon emission: Exploring sustainable consumption in the face of the glass floor. *Journal of Marketing Management*. 28: 3–4, 397–419.

Connolly, John & Andrea Prothero (2003). Sustainable Consumption: Consumption, Consumers and the Commodity Discourse. *Consumption, Markets and Culture*. 6:4, 275–291.

Connolly, John & Andrea Prothero (2008). Green Consumption: Life politics, risk and contradictions. *Journal of Consumer Culture*. 8, 117–145.

Croucher, Rowland (2004). *Hermeneutics and phenomenology in research.* [online] [cited 23.2.2014] Available from Internet: <URL:http://www.jmm.org.au/articles/13615.htm>

Dolan, Paddy (2002). The Sustainability of "Sustainable Consumption". *Journal of Macromarketing.* 22:2, 170–181.

Eriksson, Päivi & Anne Kovalainen (2008). *Qualitative Methods in Business Research*. London: Sage Publications Ltd. 337p. ISBN: 978-1-4129-0316-5.

Eskola, Jari & Juha Suoranta (1998). *Johdatus laadulliseen tutkimukseen*. 7th ed. 266p. Tampere: Vastapaino.

Eskola, Jari & Juha Suoranta (2008). *Johdatus laadulliseen tutkimukseen*. 8th ed. Jyväskylä: Gummerus Kirjapaino Oy/ Tampere: Vastapaino.

Gram-Hanssen, Kirsten, Francoise Bartiaux, Ole Michael Jensen & Madeleine Cantaert (2007). Do homeowner use energy labels? A comparison between Denmark and Belgium. *Energy Policy*. 35, 2879–2888.

Gram-Hanssen, Kirsten (2008). Consuming technologies –developing routines. *Journal of Cleaner Production.* 16, 1181–1189.

Gram-Hanssen, Kirsten (2011). Understanding change in continuity in residential energy consumption. *Journal of Consumer Culture*. 11:1, 61–78.

Hans, Daniel & Gisele Böhm (2012). Sustainability in the perspective of consumers. International *Journal of Consumer Studies*. 36, 678–687.

Heikkinen, Hannu L.T., Esa Rovio & Leena Syrjälä (2008). *Toiminnasta tietoon – Toimintatutkimuksen menetelmät ja lähestymistavat.* 3. ed 218p. Helsinki: Kansanvalistusseura.

Hirsjärvi, Sirkka & Helena Hurme (2001). *Tutkimushaastattelu; Teemahaastattelun teoria ja käytäntö.* 213p. Helsinki: Yliopistopaino.

Hirsjärvi, Sirkka, Pirkko Remes & Paula Sajavaara (2009). *Tutki ja Kirjoita.* 15th ed. 436p. Helsinki: Kustannusosakeyhtiö Tammi.

Jensen, Jespen Ole (2008). Measuring consumption in households: Interpretations and strategies. *Ecological Economics*. 68, 353–361.

Kennedy, Emily Huddart, Naomi Krogman & Harvey Krahn (2013). Sustainable consumption and the importance of neigbourhood: A central city/suburb comparison. *Canadian Journal of Sociology*. 38: 3, 359–383.

Klein, John (2013). Sustainability forecast: Back to the future. *Journal of Property Management.* 78:6, 14–14. ISSN: 0022-3905

Kvale, Steinar (1996). *Interviews; An Introduction to Qualitative Research Interviewing.* 326p. London: SAGE Publications Ltd.

Kähkönen, Virve & Piia Elonen (2014). Ilmastotavoite siirtyy arkeen säästöinä ja tehostamisen. *Helsingin Sanomat*. 4:21, 2.

Kärrholm, Mattias (2011). The Scaling of Sustainable Urban Form: A Case of Scale-related Issues and Sustainable Planning in Malmö, Sweden. *European Planning Studies*. 19:1, 97–112.

Lassila, Anni & Minna Pölkki (2014). Sähkönkäyttö tehotarkkailuun. *Helsingin Sanomat.* 4:20, 26.

Lehtinen, Toni & Heli Saavalainen (2014*). Euroopan laiskin kierrättäjä*. Helsingin Sanomat. 13:84, 12.

Lincoln, Yvonna S. & Egon G. Guba (1985). *Naturalistic inquiry.* California: SAGE Publications Ltd. ISBN:0-8039-2431-3

Malmö Stad sustainable city development project. Western Harbour Bo01. [online] [cited 17.10.2013]. Available from Internet:
<URL: http://www.malmo.se/English/Sustainable-City-Development/Bo01---Western-Harbour.html>

McDonald, Seonaidh, Caroline J. Oates, Panayiota J. Alevizou, C.William Young & Kumju Hwang (2012). Individual strategies for sustainable consumption. *Journal of Marketing Management.* 28:3–4, 445–468.

Megicks, Phil, Juliet Memery & Robert J. Angell (2012). Understanding local food shopping: Unpacking the ethical dimensions. *Journal of Marketing Management.* 28:3-4, 264–289.

Ministy of Employment and the Economy (2013). *Kotitalouksien sähkönkäyttö 2011. Tutkimusraportti 26.2.2013.* [published 16.2.2013] [cited 17.11.2013]. Available from Internet: <URL:http://www.tem.fi/files/35856/Kotitalouksien_sahkonkaytto_2011_raportti.pdf>

Moisander, Johanna (2007). Motivational complexity of green consumerism. *International Journal of Consumer Studies*. 31, 404–409.

Moons Ingrid & Patrick De Pelsmacker (2012). Emotions as determinants of electric car usage intention. *Journal of Marketing Management*. 28: 3–4, 195–237.

Pakkanen, Merja & Teemu Närvä (2011). *Functioning of the electricity market in Finland –The customer's point of view.* [online] [cited 9.12.2013]. Available from Internet: <URL:http://www.vaasaemg.com/suomi/Tiedotteet/Pakkanen&Narva_SGEM_533.pdf>

Paliwal, Pramod (2012). Consumer behaviour towards alternative energy products: a study. *International Journal of Consumer Studies.* 36, 238–243.

Peattie, Ken & Andrea Collins (2009). Guest editorial: perspectives on sustainable consumption. *International Journal of Consumer Studies.* 33, 107–112.

Rakennuslehti (2011*). Skanskan uusi ekotehokas kerrostalo tarjoaa sähköauton asukkaiden käyttöön.* [published 21.9.2011] [cited 26.10.2013]. Available from Internet: <URL: http://www.rakennuslehti.fi/uutiset/projektit/26012.html>

Saavalainen, Heli & Jenni Virtainen (2014). Näin EU:n ilmastontavoitteet vaikuttavat. *Helsingin Sanomat*. 4:21, 6–7.

Salazar, Helen A., Leon Oerlemans & Saskia van Stroe-Bienzen (2013). Social influence on sustainable consumption: evidence from a behavioural experiment. *International Journal of Consumer Studies.* 37, 172–180.

Salonen, Arto O. & Mauri Åhlberg (2013). Obstacles to sustainable living in the Helsinki Metropolitan Area. *Sustainable Cities and Society*. 8, 48–55.

Skanska (2011). *Ympäristöystävän koti on kaupungissa - Espoon Adjutantti Mäkkylä*. [online] [cited 1.11.2013]. Available from Internet: <URL:http://skanska.smartpage.fi/fi/esitteet/adjutantti/pdf/Skanska_Espoon_Adjutantti.pdf>

Smeeding, Timothy S. & Daniel H. Weinberg (2001). Toward a uniform definition of household income. *Review of Income and Wealth*. 47:1, 1–24.

Statistics Finland (2012). *Asumisen energiankulutus energialähteittäin 2011.* [online] [cited 25.2.2014]. Available from Internet: <URL: http://pxweb2.stat.fi/sahkoiset_julkaisut/energia2012/data/k8_1_s.pdf>

Syrjälä, Leena, Eija Syrjäläinen, Sirkka Ahonen & Seppo Saari (1994). *Laadullisen tutkimuksen työpajoja.* 7th ed. 185p. Helsinki: Kirjayhtymä.

Tuomi, Jouni & Anneli Sarajärvi (2009). *Laadullinen tutkimus ja sisällönanalyysi*. 175p. Jyväskylä: Kustannusosakeyhtiö Tammi.

Webster, Frederick E. JR. (1975). Determining the Characteristics of the Socially Conscious Consumer. *Journal of Consumer Research.* 2, 188–196.

Ylä-Tuuhonen, Merja (2014). Sähköauto ei innosta Suomessa. *Helsingin Sanomat*. 2:7, 8.

APPENDIX 1. Interview guide

BACKGROUND INFORMATION

Name and age?
Size of the apartment?
Number of members in the household (adults/kids)?
How long have you lived in Adjutantti?
How did you live before Adjutantti?
(An apartment, townhouse, detached? Do they remember the form of heating)

What were the reasons for moving to Adjutantti?

1. THEME / THE MEANING OF ENERGY CONSUMPTION

In your opinion, what does energy consumption mean?
What does your household use energy in?
Is it important to think about how you consume?

2. THEME / ENERGY CONSUMPTION IN HOUSING
-> connecting to living in Adjutantti

Did you know about the energy efficient solutions in Adjutantti?
Did these have an impact on purchase decision? Explain.
Was there a certain solution that you found especially interesting?
If so, why? Why not?
Was the building marketed as energy efficient?

Do you monitor the energy consumption of your apartment?
How?
Heat, electricity and water?

Do you aim to save energy in your everyday life?

How? If not, why? -> Linkage to challenges and dimensions
Do they mention specific ways?
Which ones are most frequently mentioned?

Do you monitor your electricity consumption?
How? (Is it just single appliances or consumption as a whole?)
Why?
Is the bill a significant part of the household incomes?

Have you compared the electricity companies?

Do you know how your electricity is produced?
Does it matter how?

Do you think your household consumes a lot of electricity?

Do you monitor the water consumption?

Have you discussed these solutions with your family or friends?

How has moving to Adjutantti affected your interest towards energy consumption?
Do you monitor is more?

Do you feel like you know how to use the solutions?
”Home-Away-Long away” switch.

3. THEME / OTHER AREAS OF SUSTAINABLE CONSUMPTION

Which things do you look at when doing grocery shopping?
Do you look at the etiquettes?
What do you look from it? Nutrients or perhaps country of origin?
Do you buy something straight from the producer?
Do they mention organic food?
Price or quality?

Do you use public transportation?

When and how often?
Why or why not?
Do you have a car of your own?
Did you test drive the electric car?

Do you sort your waste?

Do you think sorting your waste is easy?
Does the condominium provide good possibilities for it?
How long have you been sorting your waste?

Do you feel like consuming in more sustainable way after moving to Adjutantti?